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PROFESSOR MEIKLEJOHN'S SERIES

THE UNITED STATES

Their Geography, Resources Commerce and History

with Chapters on the Tides and Chief Ocean Currents

by

M. J. C. MEIKLEJOHN
B.A., F.R.G.S.

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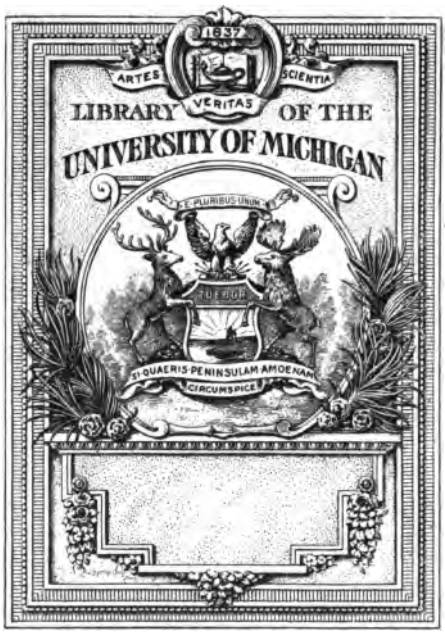
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PACIFIC OCEAN
BRITISH COLUMBIA
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OREGON
IDAHO
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NEVADA
UTAH
COLORADO
CALIFORNIA
ARIZONA
NEW MEXICO
Vancouver
Portland
Salem
Boise City
Salt Lake City
Carson City
Denver City
Santa Fe
San Francisco
Monterey
Los Angeles
San Diego
Phoenix
Tucson
El Paso
Great Salt Lake
Utah L.
Sierra Nevada
Rocky Mts.
Columbia R.
Snake R.
Colorado R.
Pecos R.
Platte R.
Mackenzie
Wrangell I.
Herald I.
Hawaii
C. Barrow
C. Bathurst
C. North
ASIA
East C.
Bering Strait
Cape Pr. of Wales
ALASKA
(United States Ter.)
Yukon
Klondike
Gold Fields
Norton Sound
St. Lawrence I.
St. Matthew
Nunivak
BERING SEA
C. Newenham
Bristol Bay
Alaska Peninsula
Kadiak I.
Chichakoff I.
Sitka
Baranof
Pr. of Wales I.
Behring B.
Mt. Fairweather
Mt. Logan
Mt. St. Elias
Mt. Wrangel
Mt. McKinley
Tanana R.
Yukon R.
Porcupine R.
Romanzoff Mts.
Inland R.
Kotzebue Sound
Norton Sound
Zacatecas
S. Luis Potosi
Monterey
Mexico
English Miles
0 100 200 300

UNITED STATES
English Miles
0 100 200 300 400 500
ATLANTIC OCEAN
GULF OF MEXICO.
Longitude West 95 from Greenwich
95 90 85 80 75 70 65
45 40 35 30 25 20
ONTARIO
QUEBEC
NEW BRUNSWICK
MAINE
Lake Superior
Lake Michigan
Lake Huron
Lake Erie
Lake Ontario
WISCONSIN
MINNESOTA
IOWA
ILLINOIS
INDIANA
OHIO
NEW YORK
PENNSYLVANIA
MISSOURI
KENTUCKY
TENNESSEE
VIRGINIA
NORTH CAROLINA
SOUTH CAROLINA
GEORGIA
ALABAMA
MISSISSIPPI
ARKANSAS
LOUISIANA
FLORIDA
TEXAS
INDIAN TERRITORY
KANSAS
NEBRASKA
YUCATAN
JAMAICA
Bay of Campeachy
Tropic of Cancer
Chesapeake B.
Delaware B.
C. Hatteras
Charleston
Savannah
St. Augustine
Tallahassee
Pensacola
Port Eads
New Orleans
Galveston
Vicksburg
Natchez
Little Rock
Nashville
Louisville
Cincinnati
Indianapolis
Chicago
Milwaukee
Detroit
Buffalo
Albany
Boston
Montreal
Quebec
Ottawa
Toronto
Kingston
Niagara
Nassau
Havana
Merida
Campeachy
Tampico
Vera Cruz
Puebla
Tehuantepec
Belize
Kingston
Long I.
Brooklyn
Nantucket
Martha's Vineyard
Cape Cod
Bahama Islands
Andros Islands
Florida Channel
Yucatan Channel
Cayman Is.
Isle of Pines
Manzanillo
Santiago
Barataria
Mobile
Pensacola
Appalachee B.
Cedar Key
Tampa
Fort Gordon
Fort Pickens
Fort Jackson
Fort Bienvenida
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THE UNITED STATES

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with Chapters on the Tides and Chief Ocean Currents

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A. M. HOLDEN
AT TWENTY-THREE
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CONTENTS

	PAGE
UNITED STATES—	
Physical Geography,	3
Map-Practice of Physical Features,	24
Political Geography,	24
The States and Territories,	40
Map-Practice of the Chief Towns,	49
Table of Distances,	51
Difference between American and Greenwich Time,	51
Table of the Chief Minerals,	52
Table of the Chief Exports,	53
Table of the Chief Imports,	54
Trade with the United Kingdom,	55
Historical Summary,	55
Date Chronicle,	61
The Geysers of Yellowstone Park,	62
The 'Big Trees,'	64
The Last Great Indian Chief,	67
Washington,	72
The New York Elevated Railway,	74
Brooklyn Bridge,	76
How Immigrants Land,	78
Early days in San Francisco,	82
Tides,	86
Currents,	89

NOTE.—The bracketed figures in **thick type** refer to the numbering of the sections. *E.g.*, on p. 10—'cotton-growing states (**17** and **38**)'—refer to sections 17 and 38.

THE UNITED STATES

PHYSICAL GEOGRAPHY

1. **Introductory.**—North America is the northern division of the New World. Roughly triangular in shape, its base lies along the frozen ocean, and its apex reaches down to the tropics. The **area** of the whole northern continent probably amounts to 8,600,000 square miles, which is less than half the extent of Asia. Its greatest length is 4500 miles, and its greatest breadth, measured along latitude 45°, is 3100 miles.

The continent is a land of **lakes**, the longest in the world, wide-rolling, fertile **plains**, magnificent navigable **rivers**, and lofty **mountains**, rich in mineral wealth, and clothed with valuable timber. Oceans wash it on every side, except where it joins South America at the Isthmus of **Panama**. But the cutting of a canal, either at that point, or a little further north at **Lake Nicaragua**, will before long convert North America into an island.

(i) America derives its name from **Amerigo Vespucci**, a Florentine sailor, who did *not*, however, discover the continent. The glory of discovery rests with **Christopher Columbus**, who first saw the soil of the New World at San Salvador, or Watling Island, one of the Bahama group, in the year 1492. He first opened America to the eyes of Europe, and the memory of his name is preserved in the many cities called Columbus and the district of Columbia in the United States.

(ii) But Columbus was not the first European to land on American soil. There were others before him—the **Norse** sailors of the tenth century. They both made settlements in, and gave a name to, **Greenland**; and to other parts on the eastern coasts they gave names, which have long since been

forgotten. Thus they called **Massachusetts Vinland**, or the Land of Vines, and Labrador and Nova Scotia they christened respectively Helluland the Big, and Helluland the Little.

2. **Coast-line.**—The coast-line of North America is estimated at a length of 24,500 miles, of which the United States

DIAGRAMMATIC MAP OF NORTH AMERICA.

takes 13,200. This is only a half of the richly developed

coast-line of Europe. A glance at the map will show that the chief indentations exist on the east coast. On the west, on the other hand, the outline of the shore is fairly regular, except to the north of latitude 50°, where the coast is bordered with an archipelago of mountainous islands, and cut into, as in Norway, by narrow fiords which run far into the land.

3. **A Comparison of Coast-lines** (i).—

East Coast.	**West Coast.**
1. Coast-line somewhat indented. Many good harbours.	1. Coast-line on the whole regular. Few good harbours.
2. Largest islands (**Newfoundland, Anticosti, Cape Breton,** and **Prince Edward Island**) towards the north.	2. Largest islands (**Vancouver, Queen Charlotte Islands,** and the **Sitka Archipelago**) towards the north.
3. **Florida** balanced by	3. the peninsula of **Lower California,** both running south.
4. The Arctic peninsula of **Alaska** balanced by	4. the dreary boulder-strewn waste of the peninsula of **Labrador.**
5. The north-eastern shores washed by a cold current from the North Pole.	5. The north-western shore washed by a warm current from the west. Result: the north-east coast colder than the north-west.
6. The great waterway in the east, the **St. Lawrence Gulf,** closed in winter by ice.	6. The great harbour on the west, **San Francisco,** enjoys a mild climate, and is therefore always open.
7. Sea deep close to the shore.	7. Sea shallow for some distance from the land.
8. The east faces Europe, and trades with it.	8. The west faces Asia and Australasia, and trades with those continents.

(ii) Similarly between the north and south of the North American coast we can find some points of difference and some of likeness. Both in the north and south there are large groups of islands—the **Arctic Archipelago** and the **West Indies.** But the northern islands are welded together by ever-

lasting rivets of ice, and are therefore uninhabitable, while the West Indies are immensely fertile and enjoy a mellow, tropical climate. In the north there is a great cold inland sea, **Hudson Bay**, where navigation is only possible for three months in the year; whilst the great sea on the south is the **Gulf of Mexico**. This is a huge warm cauldron, whence issues the **Gulf Stream**, that heats the shores of north-western Europe. Finally, on the south lies the peninsula of **Yucatan**; and that is balanced on the north by the **Melville Peninsula**.

4. The Coast-line of the United States:—

(i) The **eastern coast-line** of the United States begins to run south at latitude 45°. From that point it trends in a southerly or south-westerly direction for 600 miles, as far as **Long Island**, which a narrow sound divides from the mainland. This part of the coast is cliff-belted, and abounds in good harbours. From Long Island to the southward, the character of the coast changes entirely. Now the shore is low and sandy, broken only by the two deep inrunning bays of **Delaware** and **Chesapeake**. Still the sandy coast continues, past the elbow-shaped sandbank known as **Cape Hatteras**, till it sweeps down to **Cape Sable** (or Sandy Cape) at the end of the peninsula of Florida.

When we turn the corner into the Gulf of Mexico the coast changes again, and a low and swampy shore stretches round the whole circuit of the Gulf. The chief feature in this coast, which is on the whole very uniform in outline, is the **Mississippi Delta**. This is a long narrow tongue of land, which protrudes nearly fifty miles into the Gulf, and terminates in a fan-shaped arrangement of mudbanks; and through them the great Mississippi finds its way to the sea by many different channels. The rest of the Gulf-coast is edged with shallow, warm **lagoons**, and here and there by coral-reefs; while at the mouths of the larger rivers long bars of mud, clothed with funereal green mangroves, jut out into the sea.

(ii) The **western coast-line** of the **United States** calls for little description. It starts, a little south of latitude 50°, at **Juan de Fuca Strait**, and sweeps in a bold curve, edged by gigantic cliffs, to the southern border of the States, which is fixed a little above the head of the Californian Gulf. But 200 miles south of **Cape Mendocino** there is a sudden break in the cliff-line. This is the gap known as the **Golden Gate**, which is the entrance to the glorious land-locked harbour of **San Francisco**.

NOTE.—For further details of the coast-line see Map-Practice (section 20).

5. **Build.**—The build of the North American continent,

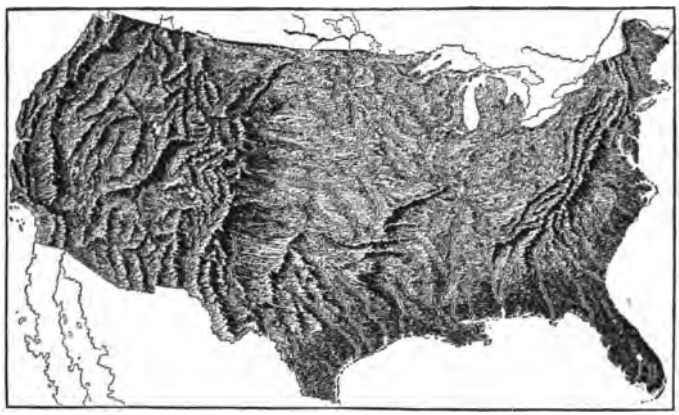
as a whole, is threefold, and the build of the United States corresponds to it. The broad features are three: a mass of mountain and table-land filling the western side of the continent, and known generally as the **Rocky Mountains**; a **Great Central Plain**, sloping away from the Rockies to the east; and a second series of mountain ranges towards the east coast, called the **Appalachian Highlands**. Briefly, then, the build stands thus: mountain and table-land on the west; plain in the middle; and mountain mass on the east.

Isolated from these three there are two other features which remain to be noticed. These are the **Atlantic Plain**, between the Appalachian Highlands and the ocean; and the **Height of Land**, or **Great Divide**. This is a slight ridge of land which crosses the continent from east to west just north of Lake Superior, and which forms the most important watershed in North America. It is quite low, and therefore presents no barrier to the winds which sweep from the North or South. Hence over all the central part of the States the variations in temperature are very sudden and very great.

(i) This ridge is more correctly known as the Height of Land on its northern edge, north of Lake Superior, and as the Great Divide on its southern edge to the south of that lake. In the centre of it are the sources of the Red River of the North, and of the two greatest rivers of the continent, the **St. Lawrence** and the **Mississippi**.

(ii) The build of North America, generally, can be effectively contrasted with that of South America. In each of these continents there is a mountain mass, largely volcanic, stretching along the whole of the west coast, and in each there is a secondary series of Highlands towards the south-east. Both continents have a vast central plain; but that of North America is treeless, while most of the South American plain is covered with forest. In both continents there is a low but important watershed in the centre; and the Mississippi, which flows south, and the St. Lawrence, which flows east, are exactly paralleled by the Paraguay-Parana, and the Amazon, which also flow respectively south and east.

6. **Mountains and Plateaus.** — The grandest system of these lies in the west, and is called by the general name of the **Rocky Mountains,** which run North and South. The



THE SURFACE OF THE UNITED STATES IN RELIEF.

whole of the western United States, from longitude 115° to the Pacific, is one vast plateau, buttressed and seamed by different ranges of mountains. The chief of these are the **Rocky Mountains** proper on the east, with Fremont Peak (13,570 feet) for the highest point. Edging the plateau on the Pacific side is the **Sierra Nevada** (=Snowy Range), and in it lie the two highest mountains in the States, **Mount Whitney** (14,900 feet) and **Mount Shasta** (14,570 feet). Between the Sierra Nevada and the Pacific lies the **Coast Range.** To the southward, where the plateau enters Mexico, lies the **Sierra Madre** (=Mother Range).

On the Atlantic side of the States, the **Appalachian Highlands** (also running North and South) are made up of two ranges, the **Alleghany Mountains** to the south and the **Adirondacks** to the north. **Black Dome** (6707 feet) in the

Alleghanies is the highest peak. The Alleghanies are crossed by many transverse valleys, through which railways are easily able to penetrate from the manufacturing districts of the East to the pastoral and agricultural plains of the West.

Both the two mountain-systems—the Rockies and the Appalachians—form to some extent a barrier to the rain-bearing winds that blow inland from the Pacific and the Atlantic.

(i) The **Western Plateau** has an average elevation of about 5000 feet. It contains three important river-basins—the **Snake** and **Columbia** basin, the **Great Basin**, and the **Colorado** basin. But little rain falls over the whole of it. It is therefore of small use for farming, but it is one of the great **metalliferous** regions of the United States.

(ii) The **Great Basin** of Utah occupies the centre of the plateau, east of the Sierra Nevada. The **Wahsatch Mountains** edge it on the east. It is nearly rainless, and has no outlet to the ocean. In the Great Basin lie the **Great Salt Lake** and other lakes of bitter water, all of which receive many rivers. Round about the lake much of the land has been reclaimed by irrigation, which has turned what was once a dreary desert into prosperous corn-lands. At the southern end of the basin is the **Death Valley** of California, one of the hottest places in the world.

7. **Plains.**—The bulk of the United States is made up of a vast **Central Plain**, which stretches from the Great Lakes to the Gulf of Mexico; and there is a secondary lowland to the east, the **Atlantic Plain**, which lies between the Alleghanies and the sea. Of **Deserts** the United States have but few. They lie chiefly in the Great Basin, and on the banks of the Colorado, such as the **Mohavé, Gila,** and **Painted Deserts.** All of them, however, support some form of vegetation, mostly sage-brush and different kinds of cactuses, whose fleshy leaves withstand drought easily.

(i) The Central Plain is divided into two clearly marked portions. These are the **Great Plains**, a low plateau east of the Rockies, and these sink gradually towards the east into the **Prairies**, properly so called. The Great

Plains are covered with grass, and are admirably adapted to cattle-raising; and the prairies are gently swelling grassy plains, with a black fertile soil. No trees grow on the prairies, partly owing to the small rainfall, and partly to the many fires, which sweep like a galloping horse over the level flats. The prairie region, which stretches from Minnesota on the north and pushes down into Texas, is the **granary** of America.

(ii) Two districts in the Great Plains deserve a special mention. These are the **Bad Lands** in the north, around the lower valley of the Yellowstone River. In them are vast stretches of a soft clay soil, in which animals sink to the fetlocks. When wet they become vast wildernesses of sticky mud, of perilous depth and tenacity. Out of the powdery plain rise masses of rock, wreathed into the most fantastic and grotesque forms. The second district is in the south, and is called the **Llano Estacado** or Staked Plain. It is a treeless, nearly waterless, yet grassy plateau, as big as Ireland. The Llano Estacado gets its name from the stiff boles of the yucca, a species of aloe, which stick up like planted stakes over its surface. In many parts of it water cannot be found for forty miles, and the cattle and sheep, that pasture there, drink but twice a week.

'I cannot give any impression of the astonishment which beset me, when after having crossed hundreds of miles of dead-level country, I saw all at once rise before my eyes on every side, towers, pyramids, pillared shafts, domes, church-spires, and pinnacles. As far as the eye could carry, I saw nothing but fantastic and grotesque shapes. One had to ask oneself if one were not the sport of a disordered fancy—so extraordinary and impossible did that natural architecture appear, created by one of the oddest caprices which freakish nature had ever allowed herself. To add to the unlooked-for effect of the picture were the wonderful tints in which these enormous rock-masses were bathed: they ran the whole gamut of the colours of the rainbow. This is the country to which the Indians gave the name of the "BAD LANDS." They believed that it was cursed by the Great Spirit, and they only ventured there with fear and trembling. The Bad Lands fill a space 200 miles long by 50 broad, and lie half a mile below the level of the sea. The startling nature of the country, the oddness of the geological formations, the great number of fossils, the marvellous abundance of game attract the visits of thousands every year.'—LECLERCQ, *The Land of Marvels.*

(iii) The **Atlantic Plain** is about 200 miles wide. It extends from the temperate region of the north, through the rice and cotton-growing states (17 and 38) of the Carolinas and Georgia, down to the wooded swamps of Florida, and the warm lakes of that sub-tropical peninsula, where the alligators love to lie.

8. **Rivers.**—The water-system of North America, and of the United States with it, is, for length and usefulness, un-

matched in the world. The cluster of the Five Great Lakes (one only of which, **Lake Michigan**, lies wholly within United States territory) affords splendid communication with all parts. The American rivers not only surpass those of the Old World in volume and length, but 'are so placed as to penetrate everywhere to the heart of the continent.' The **Missouri-Mississippi**, which drains the whole of the Central Plain, brings the temperate regions of the north into close touch with the sub-tropical lands of the south (10). The united stream of the Missouri-Mississippi is 4200 miles long, and it is thus the longest river in the world, and, for purposes of navigation, by far the most useful. It is interesting to notice that so slight an elevation exists between the source of the Mississippi in **Lake Itasca** and the Great Lakes, that a cutting, only a hundred feet deep, would make a practicable ship-canal between the two water-systems.

The rivers of the United States may be divided into three groups: (a) the rivers of the **Central Plain**, which fall into the Gulf of Mexico; (b) the rivers of the **Western Plateau**, which empty into the **Pacific**; and (c) the rivers of the **Atlantic Plain**.

The three groups may be broadly described as: (a) the **navigable rivers** of the United States; (b) the **cañon**, or gorge rivers; and (c) the **manufacturing** and **harbour** rivers.

NOTE.—The River YUKON, in ALASKA, which is part of the United States, will be treated separately in the section devoted to Alaska (43).

9. **The Central Plain Rivers.**—The chief of these, going from east to west, are the **Alabama**, the **Mississippi**, the **Colorado**, and the **Rio Grande del Norte**, or Great River of the North, as it was called by the Spaniards who lived to the south of it. This last river forms the boundary

between the United States and Mexico. Of these four the Missouri-Mississippi is infinitely the most important. It and its huge tributaries drain about **one-third** of the whole area of the United States; and, as it flows from north to south, it forms a ready means of exchanging the products of the temperate north (meat and grain) with the sugar, cotton, and tobacco of the sub-tropical south. One of the peculiarities of the Central Plain rivers (especially the Mississippi and Arkansas) is that they sometimes have their beds raised by the silt, which they themselves bring down, above the level of the surrounding country.

(i) The **Mississippi** rises in the little lake of **Itasca** on the Height of Land, just west of Lake Superior. It flows south for about 2000 miles, when it is joined by its first great tributary on the right, the muddy **Missouri**, which changes the once clear-flowing parent river into a turbid yellow flood. The Missouri itself, which is 3000 miles long, rises in the eastern slopes of the Rockies, and is swelled by two large tributaries on its right bank, the **Yellowstone** and the **Platte**. As each of these three rivers rises in the Rockies, the upper part of their courses lies through deep and savage gorges. The Yellowstone, for instance, flows for some twenty miles through a gorge, 200 to 300 yards wide, and between perpendicular walls, 1200 to 1500 feet high; so that, looking from the top, the river, foaming over its rocky bottom, appears like a silver thread.

(ii) A hundred miles after the Missouri has joined the Mississippi, the united stream is entered on its left bank by the **Ohio**. This stream, which is itself fed by the winding **Tennessee**, rises in the northern end of the Alleghanies, and joins the drainage and traffic of the eastern part of the United States to the centre. On the right bank the Mississippi receives the **Arkansas** (2000 miles), and the **Red River** from the Llano Estacado. From the point where the Ohio joins it, the great river, the 'Father of Waters,' flows through **levées**, or embankments, for about 1000 miles, so that the level of the river is actually above the low-lying ground on either side of it. All this low ground is subject to disastrous floods, owing to the occasional bursting of the levées, and the river waters have been known to spread over an area 150 miles wide. After a course of 4200 miles (counting from the source of the Missouri), the Mississippi enters the Gulf of Mexico, through a vast muddy delta, which is yearly building further and further out to sea.

(iii) The three other Central Plain rivers, the **Alabama**, the **Colorado**, and the **Rio Grande**, all discharge into the Gulf of Mexico. The Alabama falls into **Mobile Bay**, which is the best harbour on the Gulf.

10. **Navigability of the Mississippi.**—The Mississippi rises at a very low elevation; and, as its descent over its whole course is very small, its pace is smooth and even, and excellently suited for navigation. The total waterways, afforded by the great river and its tributaries, amount to about 35,000 miles. The vast quantity of mud brought down by the river makes the entrance at the delta a difficult one, but a navigable channel, 30 feet deep, is always kept open. The Mississippi itself is navigable for steamers to the **Falls of St. Anthony**, on latitude 45°, a distance of about 3000 miles. Navigation westwards can be had over the **Missouri** for nearly the whole of its course. But the most important navigable tributary is the Ohio. This river is navigable over all its course except at Louisville, where a short canal (38) has been made to circumvent some rapids. How important this river is may be judged from the fact that its head-waters flow through Pennsylvania, the great iron and petroleum field (28) of the United States. At Cincinnati, on the Ohio, a ship-canal (which is shortly to be made much larger) runs to Lake Erie, and thus the Mississippi navigation is joined to that of the Five Great Lakes.

(i) 'The traveller can sail from Pittsburg (on the **Ohio**) 4300 miles, to Fort Benton, Montana (on the **Missouri**), and from Minneapolis, 2200, to **Port Eads** on the Gulf of Mexico.'—*Scientific American.*

(ii) One of the great dangers to navigation on the Missouri-Mississippi arises from what are known as '**snags**.' These are trees which have fallen into the river and, having become saturated, have sunk with their heads pointing down stream. Numbers of Mississippi steamers have run against these snags, and have been sunk in consequence.

11. **The Western Rivers.**—There are three of these: the

Columbia, the **Sacramento**, and the **Colorado**.[1] They all of them have had to saw their way through the Western plateau to the Pacific, and so have cut out for themselves deep beds called **cañons**, a Spanish word which means tube. None of them are navigable, except the Columbia for a short distance, on which stands the wheat-shipping port of Portland, Oregon (41). But the Sacramento and the Columbia produce very valuable **salmon fisheries**. Some of them, too, are valuable for **irrigation**, as in California, and for **floating down timber**, as in Washington and Oregon.

(i) The **Columbia** (1400) rises in the Canadian Rockies, and has for its chief tributary the **Snake**, which rises near the source of the Yellowstone. The salmon in the Columbia are captured by means of a sort of revolving mill-wheel, which catches the fish up between the slats and throws them into troughs.

(ii) The **Sacramento**, with its tributary, the **San Joaquin**, from Mount Whitney, falls into San Francisco Bay. On one of the tributaries of the smaller river is the famous **Yosémité Valley**, where a little stream plunges down 2600 feet, 1500 feet of this being in one leap.

(iii) The **Colorado** (1000) rises near Fremont Peak, and falls into the Gulf of California; it has the chief deserts of the United States in its valley. This is *the* **Cañon** river of the United States. The stream passes 'through the most stupendous series of chasms in the world, with walls of marble and granite from 1000 to 6500 feet high, very precipitous and oftentimes for many leagues perpendicular, sculptured into wildly fantastic forms and brilliantly tinted in deep red and yellow, brown and grey, purple and black. (Hence the name Colorado or Coloured River.) Sometimes these gigantic cliffs fairly overhang the water, and the boatman, looking upwards, can see but a narrow strip of blue sky apparently resting on the ragged crags.'—KING'S *Handbook to the United States.*

12. **The Atlantic Rivers.**—These rivers rise among the Appalachian Highlands, and flow across the Atlantic Plain. None of them are very long, for the plain itself is only some two hundred miles broad. But they are of the highest

[1] Note that there are two COLORADOS, one falling into the Pacific and one into the Gulf of Mexico.

use, (1) because they supply water-power for manufacture, and (2) because they have, most of them, deep inrunning estuaries, and thus furnish good harbours. The most important are the **Hudson**, the **Delăware**, the **Susquehanna**, the **Potōmac**, the **James**, and the **Savannah**.

(i) The **Hudson** (325) rises among the Adirondack Mountains, and its lake-like expanses are renowned for beautiful scenery. Great steamboats run up it every day from New York for half its length to the head of navigation at the **Falls of Troy**. From Troy a canal runs west to Buffalo on Lake Erie (14), and another north, to meet a stream which enters Lake Champlain, to connect with Montreal in Canada.

(ii) The **Delaware** (300) falls into Delaware Bay, and has on its estuary **Philadelphia**, one of the greatest ports and manufacturing towns of the United States.

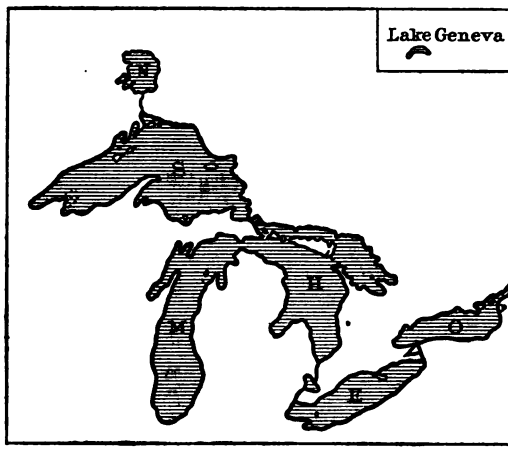
(iii) The **Susquehanna** (500), the **Potomac** (400), and the **James** (350) all flow into Chesapeake Bay. The last two have fine estuaries, and are busy commercial rivers; but the Susquehanna is a rushing shallow stream which will not admit of navigation. Large quantities of timber are, however, floated down it. Chesapeake Bay is renowned for its edible fish, its oysters, and for the canvas-back duck, so prized by American epicures.

(iv) The **Savannah** (300) rises at the southern end of the Alleghanies, and has at its mouth the hot, unhealthy port of Savannah, which exports some of the best cotton in the world (27).

13. **Lakes.**—The United States has to share its lake-system with Canada. The chief group is that of the Five Great Lakes, **Superior**, **Michigan**, **Huron**, **Erie**, and **Ontario**. But of these Lake Michigan alone lies wholly within United States territory; the rest only belong to the States on their southern shores. Other notable lakes in the United States are **Lake Champlain**, in the north-east corner, which, by means of canals at its southern and northern ends, joins the navigation of the St. Lawrence and the Hudson; **Lake St. Clair** between Lakes Huron and Erie; and the **Great Salt Lake** in the western plateau.

(i) The **Five Great Lakes** form the hugest body of fresh water in the

world. So vast are they that there are daily tides on some of them, with a rise and fall of a few inches. **Lake Superior** alone is as big as Ireland, and the Indians call it 'Brother to the Sea.' Lakes **Huron** and **Michigan** are each 20,000 square miles in extent, or about thrice the size of Wales. All of them abound in fish, and are swept by fierce gales, while the splendid steamers that ply on them are often out of sight of land. Between Erie and Ontario are the famous **Niagara Falls.** The Fall on the American side is higher (163 feet), but not so wide as the Canadian cataract. The water-power afforded by these gigantic Falls is used to generate electricity in Buffalo, a town some twenty miles away.



(ii) The **Great Salt Lake** rests on the Great Basin, about the middle of the Western Plateau. The water is warm, and bitterly salt, so that sinking in it is nearly impossible. It varies in size, and is at present about 2000 square miles in extent. 'In the summer, the Utah people and tourists visit the lake by thousands, bathing chiefly and boating a little, in a salty sea higher than the Alleghany Mountains.'

(iii) A little south of the Great Salt Lake is **Utah Lake**, 'a beautiful expanse of fresh, sweet water, twenty-five miles long and ten miles wide, abounding in large speckled trout and waterfowl.'

(iv) 'The **Green Lake** in Colorado is one of the highest in the world. Its surface lies at an elevation of 10,250 feet above sea-level, and its shores are perpetually covered with snow. The water is clear as crystal, and large trunks of petrified trees may be seen at a depth of 100 feet.'—*Scottish Geographical Magazine.*

14. **Lake Navigation.**—Navigation on the lakes is nearly as dangerous as on the ocean; they are subject to dense fogs

and fierce snowstorms. The lake shipping trade, however, is of the highest importance to the United States. By means of it the grain, the meat, and the metals of the western and central states are easily brought to the eastern seaboard for foreign export. Large steamers, many of them as big as ocean-going vessels, ply over all the great lakes, and the number of sailing ships is very large. The two obstacles to lake navigation are at **Niagara Falls**, where the Welland Canal on the Canadian side admits of the passage of ships, and at the **Sault St. Marie Rapids** between Huron and Superior. There are two canals at this point, one on the American and one on the Canadian side. Through the American canal there passed, in the year 1892, nearly twice as much shipping, during the seven months of navigation, as passed through the Suez Canal for the whole year. Southwards, a canal runs from **Toledo** on Lake Erie to join the navigation of the **Ohio** at Cincinnati. At present this canal will only receive small vessels; but it is being enlarged so as to admit vessels of deeper draught. From **Buffalo**, on the same lake, another canal, the **Erie Canal**, runs east to join the navigation of the **Hudson** at Troy.

15. **Climate.**—The United States extend through twenty-five degrees of latitude, starting a little south of latitude 50°. Hence, primarily, the climate varies with the latitude, and ranges from **temperate** in the north and centre to **sub-tropical** in the south.

But the climate also varies with the physical features. That of (i) the **Atlantic Plain** is modified by its nearness to the ocean, but is yet marked by hot summers and cold winters. (ii) The climate of much of the **Central Plain** is one of **extremes**, and is subject to very severe winters, owing to there being no transverse mountain chain to keep off the

icy winds from the north. (iii) The **west** is much more elevated than the east. Hence the climate is **drier**; and, as the Rocky Mountains shut off the cold winds from the east, the climate is very hot, *e.g.*, in the **Death Valley of California** and in the **Gila Desert**, near the river Colorado. (iv) The **Pacific Coast** has a warm climate tempered by breezes and showers from the ocean.

Two noticeable phenomena of the United States climate are the presence of **cyclones** and **blizzards**.

(i) **Blizzards** are terrific gales which blow in winter from the north, and are accompanied by intense cold. 'The icy wind cuts like a knife, no clothing seems to keep it from the person, and, penetrating to every part, it drags out every particle of vital heat, leaving but a stiffened corpse of him who is so unfortunate as to be exposed to it.'—DODGE'S *Hunting Grounds of the Great West.*

(ii) In the winter of 1885-6, the influence of a blizzard blasted many of the orange-groves of Florida, which lies just outside of the protection of the Alleghanies. From the same cause, too, ice occasionally forms at the mouth of the Mississippi, which is actually in the same latitude as Cairo.

BLIZZARDS generally attack the Central Plain; but in the spring of 1888 one swooped upon NEW YORK, and the eastern seaboard generally, with terrible fury. All telegraphic communication between New York, Philadelphia, Baltimore, and Washington was cut off, and enormous snowdrifts filled all the railway cuttings. Pedestrians were overwhelmed with the snow in the very streets of New York, and their bodies, still in a standing position, had to be dug out of the closely packed snowdrifts.

(iii) A **cyclone** or **tornado** is a hurricane which travels in a circular direction. Such storms are of somewhat too frequent occurrence in the Central Plain. One of them, in the year 1890, passed up the valley of the Ohio and attacked the town of Louisville in Kentucky. 'In an instant great stone warehouses, places of amusement, railway stations, private dwellings were levelled with the ground—and on an area of about half a square mile nothing was left but a mass of débris.'

(iv) In May 1896 a terrific **cyclone** swept over the States in the middle valley of the Mississippi. Five towns were destroyed in Iowa alone, railway bridges were carried away, and some hundred lives were lost. The climax was reached when the great town of **St. Louis** was attacked by three distinct cyclones. The fury of the gales was such that houses were blown

down as flat as a pack of cards, and heavy railway wagons were whirled about like shavings. The greater part of the city was completely wrecked; the dead and wounded numbered considerably over 1000; and the damage to property was estimated at about £4,000,000.

16. **Rainfall.**—Speaking generally, the United States enjoys a **sufficient rainfall**, and east of the hundredth meridian rain is very equally distributed.

The rainfall is **moderate** over the **Atlantic Plain**, and grows less and less, across the Alleghanies, as you go west. On the whole the average rainfall of the Atlantic Plain is rather greater than that of England. The rainfall is **heaviest** in the **'Gulf' States**, and along the **Pacific Coast** strip. This is due to the presence of bodies of warm water in the Gulf of Mexico and in the Pacific. The rainfall is **lightest** between longitude 100° and 120° west. This is because the *eastern* rain-winds do not reach as far as this region, and because the *western* rain-winds are shut out by the barrier of the Rocky Mountains and other ranges.

(i) The rainfall in the States bordering the Gulf of Mexico averages between 50 and 60 inches annually.

(ii) The rainfall in the Great Basin averages under 10 inches a year, while the Llano Estacado is very nearly waterless.

(iii) The effect of the **Rocky Mountains** and the neighbouring ranges on the rainfall is exactly paralleled by that of the **Dividing Range** on the east coast of Australia. In both continents there is a narrow and well-watered coast-strip, and in both the two great chains of mountains shut the rain out of the lands on the other side of them.

17. **Vegetation.**—The vegetation of the United States of course depends on the climate and rainfall. The rainfall in the east and Pacific coast is abundant, and it is here, therefore, that we find the great forests of **pine, birch, oak, maple,** and **hickory** in the east, and of gigantic **pines** in the west. On the prairies succulent **grasses** grow, and the middle states

of the Central Plain produce all the temperate varieties of **grain**, but especially **maize**. Towards the south-east, as the climate grows warmer with the latitude, **tobacco** is extensively grown; while the hot, moist lands of the Gulf States yield **cotton**, **rice**, **sugar**, and all sorts of tropical fruits, such as **bananas** and **pineapples**. All kinds of temperate fruits, but especially **apples**, grow in the north-east of the United States, while California, on the west, produces the **vine** in perfection, and Florida, on the south-east, the **orange**.

(i) As the **maple** (from the sap of which sugar is produced), the birch, oak, and other deciduous trees are characteristic of the north, so the south is marked by varieties of trees, which require heat, such as the **acacia**, the **magnolia**, and the **palmetto**.

(ii) The greatest vegetable marvels of the United States are the '**Big Trees**' of California. Next to the giant 'gums' of Australia, they are the largest and tallest trees in the world. Their maximum height is 325 feet (Salisbury Cathedral spire is 400 feet high), and their diameter is such that a carriage and horses have driven through a hole cut in the middle of one of them. The trees, which have a bright cinnamon-red bark, grow in groves, two of the most famous of which are the **Calaveras** and **Mariposa** groves, both in California. (See also pp. 64-67.)

(iii) The rainfall of the States grows smaller from east to west; and hence the growth of trees gradually ceases, when the Alleghanies are passed; and the Central Plain, but for artificial replanting, is nearly treeless. But in the States of **Wisconsin**, **Michigan**, and **Minnesota**, which lie around the Great Lakes, great pine-forests appear again. The wind, blowing across these great expanses of water, brings a plentiful supply of rain to these States; hence the growth of the forests. For the same reason, Florida, to the southward, where the rainfall is very heavy, produces a valuable variety of timber, known commercially as **pitch-pine**.

(iv) Even the desert regions of the United States have some sort of vegetation. The Llano Estacado is covered with grass; and other deserts, which enjoy a rather larger rainfall than those of the Old World, support different varieties of the Cactus, a plant with thick, fleshy leaves, well calculated to withstand drought.

(v) Of grasses, that grow on the Central Plain, there are two famous kinds —the **buffalo grass** of the prairies, and the **blue grass** of Kentucky. The buffalo grass in winter time turns into an excellent natural hay, which

affords valuable feeding for stock. Thanks to the grazing on the blue grass, Kentucky rears a celebrated breed of horses.

At the time of the Revolutionary War in 1775, most of the eastern part of the States was covered with a dense forest. 'The underbrush grew dense and rank between the tall trees, making a cover so thick that in many places it was impenetrable; and nowhere could the eye see as far as a bow could carry. No horse could penetrate it, save by following the game trails or paths chopped with the axe. Here and there it was broken by a rare hillside glade or meadow, but elsewhere a man might travel for weeks in a perpetual twilight, the interlacing twigs forming a dark canopy above his head.'—ROOSEVELT'S *Winning of the West.*

18. **Animal Life.**—North America and South Africa were once the game-countries of the world: they are so no longer. The white skin-hunter, and the Indians, after they had learnt the use of fire-arms, have destroyed most of the larger game. However, the Americans are doing noble work to try and save the remainder of their game in huge game-preserves, and especially in the **Yellowstone National Park** in Wyoming. The giant **moose**, with flat spreading horns, and the **wapiti**, or red deer, linger in the forests, the **prong-horn antelope** on the plains, and in the Rockies **grizzly** and **black bears**, **pumas** or American lions, and **wolves** are found. Specially noteworthy in North America generally, and in the United States with it, are the **beaver**, the wild **turkey**, and the pouched **opossum**. The **buffalo**, once so numerous that herds of them stopped railway trains, now only exists in a semi-domesticated condition.—Game birds are plentiful—different species of **grouse**, and vast numbers of **wild-geese** and **ducks**.—The north-eastern coasts swarm with fish, such as the **cod**, **halibut**, **mackerel**, and **shad**, and Chesapeake Bay is noted for its **oysters**. The Great Lakes, the fisheries on which are the most valuable in the world, team with edible **fish** (trout, sturgeon, and whitefish), and the rivers, on the east and west, with **salmon** and **trout**.—Of reptiles the **rattlesnake** extends from Maine to Texas, and the **alligator** is common in the swamps

of Florida.—The **domestic animals** are those of Europe. **Cattle** pasture in vast herds west of longitude 100°, **pigs** are reared in the maize-producing states of Iowa and Ohio, and Pennsylvania, Texas, and California are celebrated for their **sheep.**

(i) So late as 1871-2, says an American hunter, 'there was apparently no limit to the number of buffalo,' and during the three following years at least five million were slaughtered for their hides alone. To-day there are perhaps about 1200 buffaloes left alive on the whole continent, and most of these half tame.

(ii) Mr. Parkman, an American historian, thus describes a buffalo-herd on the Arkansas river in 1846:—'From the river-bank, away over the swelling prairie as far as the eye could reach, was one vast host of buffalo. The outskirts of the herd were within a quarter of a mile. In many parts they were crowded so densely together, that in the distance their rounded backs presented a surface of uniform blackness; but elsewhere they were more scattered, and from amid the multitude rose little columns of dust where some of them were rolling on the ground. Here and there a battle was going on among the bulls; we could distinctly see them rushing against each other, and hear the clattering of their horns, and their hoarse bellowing.'

(iii) The **Yellowstone National Park**, in the upper valley of the Yellowstone River, is about half as large as Wales. It is a playground for the American people, and thousands come yearly to see its **geysers**, which are the largest in the world, its mammoth **Hot Springs**, and its **fountains** of **boiling mud** that shoot forty feet into the air. But the Park is, above everything else, an asylum for all the rarer species of big game, which are strictly preserved by the United States government. Deer and antelope, wapiti and moose, wolves and foxes, mountain-sheep and coyotes (a small kind of wolf), and many other wild animals, increase and multiply within the vast forests of the Park. Here also, in the quieter valleys, small herds of **buffaloes** are still to be found. (See also pp. 62-64.)

19. **Inhabitants.**—The people who inhabited the United States before the white man came, are known as **Red Indians.** They are not, however, red, but of a coppery colour, with either aquiline or blunted noses, and long, straight, black hair. Contact with the white man, drink, and devastating epidemics, like smallpox, have greatly thinned their numbers, and now there are only about 300,000 of them left. They

are gradually disappearing, even as the buffalo, on which they chiefly depended for their livelihood, has disappeared already. The people that dispossessed the Indians and beat them back further and further west, are of **Anglo-Saxon race.** It was **English** colonists (45) that first began to settle in the United States, and the Americans are still largely of English descent. But the United States get many **Irish** and **German** immigrants, and towns like Milwaukee, and parts of New York and Chicago are German towns,—with German manners, German amusements, German shops. St. Paul and Minneapolis, too, are practically Scandinavian cities. In the south the **negro** element is very strong, and of the negroes there are about eight millions, who are the descendants of the old slaves. They are mostly an unenterprising and lazy people, and are willing to do just so much work as will keep them alive, and no more. On the Pacific coast are large numbers of **Chinese,** who are useful servants and laundrymen, but whom the Americans bitterly detest.

(i) The name Indian is a misnomer. It arose out of Columbus' believing that, when he had sighted America, he had discovered India. The most famous tribes of Indians are the **Sioux** (pronounced *Soos*) and **Bloods** of the Upper Missouri Valley, and the fierce **Comanches** and **Apaches** of the southwest, who, mounted on their hardy ponies, were once the terror of the Plains. The Indians of the United States are settled in 'Reserves'—districts specially set apart for them—the largest of these is **Indian Territory,** a fertile stretch as large as Scotland in the heart of the country.

(ii) The Indians were hunters and warriors. But hunters they can be no longer, for the buffalo have gone, and war is forbidden to them by the United States government. Many tribes in the Indian territory are farmers; but in other reserves they are looked after, generally very badly, by Indian 'Agents,' and fed at the expense of the government. (See pp. 67-72.)

(iii) To the white settlers of thirty years back and earlier the Indians have offered a fierce resistance; and their resolute cunning has cut off many a wagon-train of immigrants pushing westwards.

'The Indian's great delight is the attack of a wagon-train. There is

comparatively little risk, and the plunder is ample. For days he will watch the slow-moving line, until he knows exactly the number, etc., of men that defend it. If a direct attack involves too much risk, the next concern is to get possession of the horses and mules. He will follow the train, even for weeks, unseen and unsuspected, until lulled into false security, the guardians become careless, and, like a thunderbolt from a clear sky, the Indians rush into the herd with whoops and yells, scare it into a stampede, and in a moment all disappear together.'—DODGE'S *Hunting Grounds of the Great West.*

20. MAP-PRACTICE FOR THE UNITED STATES

1. Bays and Gulfs.—On the **East**: **Cape Cod Bay, Delaware Bay, Chesapeake Bay.** On the **South**: **Tampa, Apalachee, Mobile,** and **Galveston** Bays. On the **West**: **Monterey Bay, The Golden Gate, Puget Sound.**

2. Straits and Sounds.—On the **East**: **Long Island Sound, Pamplico Sound** (inside Cape Hatteras). On the **West**: **San Juan de Fuca Strait** (to Puget Sound).

3. Capes.—On the **East**: **Capes Cod, Hatteras,** and **Sable** (at the end of Florida). On the **West**: **Point Concepcion, Cape Mendocino, Cape Flattery.**

4. Islands.—The chief are: **Nantucket** and **Long Islands,** and **Florida Keys** on the **East**; various low marshy islands round the **Gulf of Mexico**; islands of **Alaska, Sitka Archipelago,** and **Aleutian Islands.**

5. Mountains.—(a) The **western** system, including: the **Rocky Mountains,** the **Wahsatch Mountains,** the **Sierra Nevada,** the **Coast Range,** and the **Sierra Madre**; (b) the **Eastern** or **Appalachian** system, including: the **Blue Ridge,** the **Alleghanies,** the **White, Green,** and **Adirondack Mountains**; (c) the **Mountains of Alaska.**

6. Rivers.—(a) Rivers of the **west**: **Columbia, Sacramento, Colorado**; (b) of the **east**: **Connecticut, Hudson, Delaware, Susquehanna, Potomac, James, Savannah**; (c) of the **centre**: **Rio Grande, Colorado, Alabama, Missouri-Mississippi.** Chief tributaries of the Mississippi.—On the **right**: **Missouri** (with **Yellowstone, Platte,** and **Kansas**), **Arkansas, Red River.** On the **left**: **Wisconsin, Illinois, Ohio** (with **Tennessee**); (d) River of **Alaska**—the **Yukon.**

POLITICAL GEOGRAPHY

21. **Boundaries and Extent.**—On the west and east the United States are bounded by the Pacific and Atlantic Oceans, on the south by the Gulf of Mexico and the Rio

Grande, and on the north by Canada. The northern boundary runs along the forty-ninth parallel of latitude till it comes to the Great Lakes, and then sweeps round the southern shores of these waters, and is fixed in the north-east along the valley of the St. Lawrence. Isolated from the main body of the United States, but included in its dominions, is the great north-western peninsula of **Alaska** (43). Including Alaska, the total **area** of the United States is **3,500,000 square miles**, or just a little smaller than the whole area of **Europe**.

22. **Population and People.**—The population of the States at the last census (1890) was sixty-two millions; and, before the century is out, it will probably have reached 80 millions. Of these by far the largest majority are white people, the negroes (19), the largest coloured element in the population, numbering about 8,000,000. The population increases very largely of itself, and is further assisted by constant **immigration** (see also pp. 78-82) from Europe, Germany and Ireland sending the greatest numbers. The average density of population is a little more than twenty to the square mile.

(i) In the year 1790, when the first census was taken, the population of the United States numbered about 3,000,000 whites.

(ii) The population is densest in the north-eastern part of the States, being there about 150 persons to the square mile. Five causes have contributed to this result: (a) a temperate climate (15); (b) a fertile soil; (c) abundance of water-power (12); (d) great mineral wealth; and (e) the presence of good harbours on the coast (8).

(iii) Around the valleys of the Ohio and middle Mississippi, the population is also very dense (100 to the square mile), the causes being much the same as in the first case.

(iv) As we travel further west, the population grows smaller, because the decreased rainfall (16) makes agriculture less and less possible. Stock-farming (ranching) takes its place, but stock-farming does not require many people to carry it on.

(v) The plateau region of the Colorado valley, with its very light and spasmodic rains (16), is the most thinly peopled district in the United States. There is here less than one person to the square mile.

(vi) Immigrants to the number of 16,000,000 have landed on the shores of America. The Americans welcome any immigrant that will work; but they refuse to have, and send back again, all foreign-born criminals, idiots, and paupers—all persons, in fact, that are likely to become a burden on the State. **Chinese**, too, are now rigorously excluded, nominally because they are dirty in their habits, but actually because the cheap wages, they are willing to work for, undersell local white labour.

23. **Names of the States and their Government.**—The United States consist of 45 **States**, 5 **Territories**, and 1 **Federal District**, the District of Columbia (D.C.), on the left bank of the River Potomac (12). The largest State is **Texas**, which is twice as big as the British Isles, and the smallest is **Rhode Island**, about the same size as Derbyshire.

The United States is a **Republic**, and is governed by a **President** and a **Congress**, which, like our Parliament, consists of two houses. To this Federal Parliament each State sends representatives. Congress controls the affairs of the States as a whole; but each State is **sovereign** within its own limits—that is, it manages its own local affairs. The Territories are governed partly by themselves and partly by the President; but they become States when they have a certain population. They send up members to Congress, who may speak, but not vote. The Federal District of Columbia, in which **Washington**, the capital, lies, is governed by a small committee appointed by the President.

(i) The following are the **names** of the States, with their commonly recognised **abbreviations**:—

Alabama	(Ala.)	**Maine**	(Me.)	**Ohio**	(O.)
Arkansas	(Ark.)	**Maryland**	(Md.)	**Oregon**	(Ore.)
California	(Cal.)	**Massachusetts**	(Mass.)	**Pennsylvania**	(Pa.)
Colorado	(Colo.)	**Michigan**	(Mich.)	**Rhode Island**	(R.I.)
Connecticut	(Conn.)	**Minnesota**	(Minn.)	**South Carolina**	(S.C.)
Delaware	(Del.)	**Mississippi**	(Miss.)	**South Dakota**	(S. Dak.)
Florida	(Fla.)	**Missouri**	(Mo.)	**Tennessee**	(Tenn.)
Georgia	(Ga.)	**Montana**	(Mont.)	**Texas**	(Tex.)
Idaho		**Nebraska**	(Nebr.)	**Utah**	(U.T.)
Illinois	Ill.)	**Nevada**	(Nev.)	**Vermont**	(Vt.)
Indiana	(Ind.)	**New Hampshire**	(N.H.)	**Virginia**	(Va.)
Iowa		**New Jersey**	(N.J.)	**Washington**	(Wash.)
Kansas	(Kans.)	**New York**	(N.Y.)	**West Virginia**	(W. Vir.)
Kentucky	(Ky.)	**North Carolina**	(N.C.)	**Wisconsin**	(Wis.)
Louisiana	(La.)	**North Dakota**	(N. Dak.)	**Wyoming**	(Wyo.)

(ii) The territories, at present, are **Arizona** (Ariz.), **New Mexico** (N. Mex.), **Alaska** (Alas.), **Indian Territory** (Ind. Ter.), and **Oklahoma.** Any of these may become States, when they have reached the requisite number of population. They will then send up members to Congress.

(iii) The President of the United States has a right of veto on all laws, and is the titular commander-in-chief of the Army and Navy. The United States **Navy** is small, but efficient; and the **Army**, which numbers only 25,000 men, is chiefly employed in keeping the Indians quiet.

(iv) Mr. Bryce, in speaking of the position which Federal Government holds towards the different State Governments, likens the United States to 'a group of ancient chapels, over which the vast Cathedral of the Union has been built.'

24. **Religion and Education.**—Ever since the Americans declared their independence of England on the Fourth of July 1776, they have appreciated the blessings of freedom. Accordingly the fullest possible equality and freedom are granted to every religious sect. About half of the people are Protestants; and about 10,000,000 Roman Catholics.

Education is well cared for, and it is within the power of the poorest child to get good schooling. In almost every country district there is a section of land specially set apart for school use.

(i) It is to the **Puritan** settlers (**45**) in the **New England States** that the United States owe their educational system. The men of Massachusetts, by an ordinance in the year 1647, declared: 'Now, that learning may not be buried in the graves of our fathers, every township in this jurisdiction, after the Lord had increased them to fifty householders, shall then forthwith appoint one within their town to teach all such children as shall resort to him to write and read.' The result was that 'in the middle of the eighteenth century New England was the one part of the world where every man and woman was able to read and write.'

(ii) The oldest and most famous University in the United States is **Harvard**, near Boston, which was founded in 1638.

(iii) Education is most widely diffused in the north and east. In the Southern States, which up to the war of 1861-5 had no manufactures, and merely grew cotton by means of slave-labour, the proportion of illiterates ranges from fifteen to fifty per cent. Among the negroes themselves, nearly three-fourths of them can neither read nor write.

(iv) One of the most curious religious sects in the United States is that of the **Mormons**. These people claim to have received a special revelation, and a series of sacred books, from on high. Their prophet, **Joseph Smith**, founded a Mormon settlement in Ohio, from which he made many converts. But the new religionists endured much persecution, and their leader Smith was shot dead, while lying in a gaol, by rioters. In 1847, **Brigham Young**, who succeeded Smith in the leadership, led a picked band of pioneers across the Rockies to the shores of the Great Salt Lake (**13**). There they made their settlement; thousands of Mormons followed them across the plains, after enduring many hardships and numerous attacks from the savage Indians; and so the territory of **Utah** (**40**) was colonised.

25. **Industries.**—The industries of the United States are **stock-farming, fishing, lumbering** or timber-getting, **agriculture, mining,** and **manufactures.**

26. **Products**—(i) **Animal.**—A very large part of the wealth of the United States lies in flocks and herds. **Cattle**

and **horses** pasture on the Great Plains (7), and a specially famous breed of horses is reared in the Blue-grass country of Kentucky (17). **Pigs** are fattened on the maize that grows in the valleys of the Ohio and mid-Mississippi, and are taken to be killed at **Chicago** and **Cincinnati**. The **wool States** of the United States are Pennsylvania, Texas, and California, but the wool is manufactured in the New England States of the north-east, where water-power is abundant (12).

(i) For the fisheries of the United States, see section 18. **Gloucester** (Mass.), at the north end of Massachusetts Bay, is the largest fishing-town in the States. The **Salmon-canneries** on the Columbia River (11) are most important, and one canning establishment alone puts up in a single year 400,000 cases of salmon, valued at £400,000. The government fish-hatchery on this river is now putting 5,000,000 young salmon into the water annually to keep up the stock. There are also large salmon-canneries on the Alaskan coast. The **Oyster fishery** has its centre at Baltimore, in Chesapeake Bay.

(ii) The United States supply most of the **Sealskin** that is used throughout the world. The fur-seals are procured in the **Pribylov Islands**, in Bering Sea, off Alaska, and the headquarters of the sealing industry is at **Sitka** in the Archipelago of the same name. The fur-seal industry has been the cause of a long-standing dispute between Great Britain, on behalf of Canada, and the United States. The Americans have the exclusive right of killing the seals on land on the Pribylov Islands, but they also wish to prohibit Canadian sealing vessels from killing seals in the waters of the Bering Sea. The Americans' argument is that the Canadian sealers slaughter all seals without respect to age or sex, and that thus the fur-seal will soon become altogether extinct. But this the Canadians deny. The American land-sealers only slaughter the young male seals. The seals are driven slowly up to a killing-pen in hundreds, and there quietly knocked on the head.

27. **Products**—(ii) **Vegetable.**—The United States is pre-eminently an agricultural country, and its **grain products** not only feed its own people, but supply two out of every three loaves that are eaten in Great Britain. The chief grain crops are the **maize** of the Mississippi Valley, and the **wheat** of the temperate central states lying round the upper valley of the Mississippi, especially the two **Dakotas**, and

also of the **Pacific Slope**. The greatest flour-milling centre in the United States, and consequently in the world, is **Minneapolis**, which draws its water-power from the Falls of St. Anthony (10). Other important grains are oats, barley, buckwheat, and rye.

Cotton is grown in the states of the lower Mississippi basin, and the United States is the largest cotton-producer in the world. **Sugar** is chiefly cultivated in the hot and steamy State of Louisiana. Though some of the towns near the cotton-growing areas are now beginning to manufacture it, the chief seat of the cotton manufacture, as with that of wool, is in the New England States of the north-east. **Tobacco** is grown generally over the Atlantic Plain, but especially in the States near the south-east corner of the Alleghanies and in Kentucky. The tobacco finds its way to the sea through **Richmond** on the James River, while the great inland centre of the tobacco trade is **Louisville** in Kentucky.

The last great source of the United States' vegetable wealth lies in its **timber**. The chief timber areas are in the north-east, especially in **Maine**, which is nicknamed the 'Pine-tree State'; in the **Lake Region** (17); in the swamps of **Florida**, where the pitch-pine grows; and along the well-watered **Pacific Slope** (16). In the year 1888 the total product of 'lumber' was estimated at £120,000,000.

(i) The United States is the greatest wheat-producing country in the world. Two main causes contribute to this: (a) the cheapness of the land,

and (b) the fertile black soil of the prairies which needs no manuring. The Pacific Slope owes its fertility to the fact that a great deal of rich volcanic soil is washed down from the mountains that overlook it.

(ii) The largest **cotton-producing** State is Texas, but the finest cotton grown is the **Sea-Island cotton**, produced in some low unhealthy islands off the coast of Georgia.

(iii) Minor agricultural products are fruits (17) and hops. For the cultivation of the **vine** and **wine-making**, and for the preparation of dried and tinned fruits (raisins, prunes, pears, and peaches), **California** has a name above all the States in the Union. The yield of Californian wine is increasing, and the produce of its vineyards is shipped to all parts of the world.

(iv) The United States receives a very large number of German immigrants (19, 22); Germans are a great beer-drinking race; and much beer, in which **hops** are largely used, is brewed. Hence the cultivation of **hops** is important. New York is the principal hop State.

28. **Products**—(iii) **Mineral.**—There is not a single important mineral which the United States is without. By far the most important mineral is **coal**, and next follow **iron, silver, gold, copper,** and **petroleum**. The **coal area**, which is estimated at twice the size of the British Isles, stretches along the north-west side of the Alleghanies, and includes the States from **Pennsylvania** and **Alabama**. Isolated from this coalfield is another very important one in **Illinois**; and the coal production of that State ranks second after Pennsylvania, which is first. Though there are important **iron deposits** in Eastern Pennsylvania and Northern Alabama near the coalfields, yet the largest quantity of iron is mined round **Marquette** on Lake Superior, whence there is easy transport by lake and canal (14), to the coalfields. Of **petroleum** Pennsylvania is the chief producer, and the oil is run from the wells through thousands of miles of piping to Lake Erie and the Atlantic coasts. In Ohio, too, there is a large oil-field, and near Chicago is the largest oil-refinery in the United States.

(i) The United States produces more **petroleum**, more **copper**, more

silver, and more **lead**, than any country in the world. **Gold**, for which the United States is second only to South Africa, is chiefly mined in California, **copper** in Montana, Arizona, and Michigan (at the Calumet mines).

(ii) **Silver** is chiefly mined in the States of the western plateau,—Colorado, Montana, and Utah.

(iii) A most valuable mineral fuel is found in the **natural gas** of Ohio, Indiana, and Pennsylvania. This wonderful product of the earth is piped direct into cities, where it lights the streets, drives machinery, and does the heating and cooking in private dwellings.

(iv) To put it roughly, **fuels** (coal, petroleum, etc.) come from the **East**; **precious metals** (gold, silver, and quicksilver) from the **West**; and **ordinary metals** (iron, copper, etc.) from the **Centre**.

See table of chief minerals on p. 52.

29. **Manufactures.**—The possession of vast stores of coal and iron—both moderately close to one another,—of abundant water-power, and of unsurpassed communication by water (which conveys the manufactured products to those States that want them, at a very cheap rate), has made the United States one of the first manufacturing nations in the world. The leading manufactures are, in their order, **flour-milling** (27), **meat-preparation** (26), **iron** and **steel-casting**, **woollen manufactures**, **lumber-sawing**, **cottons**, and **iron manufactures**. Two-thirds of all the manufactures are in **New England States** (N. J., N. H., and Mass. especially), and in **New York**, **Pennsylvania**, and **Ohio**, where all the conditions of successful manufacture are present. The largest manufacturing towns are **New York**, **Philadelphia**, **Pittsburg**, and **Brooklyn**.

(i) The most important iron-town is **Pittsburg**, with its sister city, **Allegheny**, which lies in the heart of the iron, coal, and petroleum districts of Pennsylvania. Pittsburg lies just where the Allegheny and Monongahela Rivers meet to form the Ohio (10); and its manufactures, and those of the east generally, can go down the Ohio, and so, by means of the Mississippi waterways (10), spread all over the States.

(ii) **Woollen manufactures** have their chief seat in the New England States, particularly at the towns of **New York** and **Boston** and in **Phila-**

delphia. The same cause attracted this industry to these States as brought the woollen industry to Yorkshire in the first instance—namely, abundance of water-power (**12**).

(iii) **The manufacturing 'South.'** Before the war of 1861-5 (**49**), the southern States were **'plantation'** States only, producing cotton, tobacco, and sugar; and manufactures were hardly known. 'To-day immense factories, iron and steel mills, forests of tall chimneys, are rising everywhere, especially in the States of Alabama, Tennessee, West Virginia, and Kentucky. There is more and cheaper iron in the State of Alabama than in any country in the world.' **Atlanta** (the capital of Georgia), which lies near the Alabama iron-fields, is the chief iron-town; and **South Carolina** is *the* cotton-manufacturing State of the south.

(iv) For a great seafaring nation, the Americans have not devoted much attention to **shipbuilding** for ocean traffic; but the shipbuilding industry for the lake traffic is very large. This goes on at the great lake-ports—Chicago, Duluth, Detroit, Milwaukee, and Buffalo. Philadelphia builds for ocean traffic.

(v) The Americans are the most ingenious inventors in the world, and in nothing has their ingenuity been better shown than in the manufacture of **agricultural machinery.** The manufacture of these labour-saving appliances was forced on them by the fact that white farm-labour is nearly everywhere in the United States dear and scarce. The chief seats of this industry are at **Connecticut** and **Chicago**, the latter the outlet for the great wheat-growing regions of the west, and the heart of the districts that would require such machinery.

30. **Commerce and External Communications.**—The United States face both the Old and the New World, and with both of these the **sea-borne commerce** is very great. But the States are also a world in themselves—a collection of countries with widely differing soils and climates. Hence the **domestic commerce** between State and State is enormously important. Speaking broadly, the United States **exports** consist chiefly of **raw materials,** the products of the **farm,** the **mine,** and the **forest.** The **imports,** on the other hand, are various, and consist of **articles of consumption,** like coffee, sugar, tea, and fruits; of **raw materials,** like silk, wool, hides, indiarubber, and tin, and of **manufactures,** such as those of silks, woollens,

and cottons, of chemicals, and of iron and steel, and other metal manufactures. **Tobacco** is both a large import and a still larger export.

See tables of EXPORTS and IMPORTS on pp. 53-55.

(i) The total value of the sea-borne commerce was in the year 1895 over £305,000,000. This puts the United States second only to Great Britain among the commercial countries of the world. The exports and the imports are about equally divided.

(ii) The chief export of the United States is **cotton**. Next come **bread-stuffs**, **provisions** (meats and cheese), **mineral oils**, **live-stock**, **iron** and **steel**, **wood**, and **tobacco**.

(iii) The country with which the United States have the largest commercial dealings is **Great Britain** (See section 50). Counting exports and imports together, about one-third of the whole foreign trade of the States is done with us. The United States' exports to us consist, with the exception of **cotton**, **petroleum**, and **tobacco**, almost exclusively of **foods**, such as bread-stuffs, bacon and hams, and beef (living and dead). In exchange we send the States, in order of importance, **woollens**, **metals** of all kinds, **cottons**, and **jute manufactures**.

(iv) After Great Britain, at a long distance comes Germany, and very near her France. There is also, as is only natural, a very large trade between the United States and British North America, and also with the West Indies and Brazil, from which the Americans get most of their sugar.

31. **External Communications and Chief Ports.**—The Americans have the second largest merchant fleet in the world; but it is not nearly large enough for the foreign trade. Most of their commerce is carried on in foreign vessels, especially British. The eastern ports keep in close touch with Europe by many lines of magnificent steamers. The great English port for American trade is **Liverpool**, and from it leave the 'ocean greyhounds' of the Cunard and White Star lines. Germany trades with America from Hamburg and Bremen; but all the big German liners call at Southampton. The most important American ports for general merchandise, on the east coast, are **New York**,

Boston, Philadelphia, and **Baltimore.** On the west coast, the United States trade with Australasia (Sydney and Auckland), with China (Hong Kong), and with Japan (Yokohama). This trade centres in **San Francisco.** The busiest southern port is **New Orleans.**

The **Lake-ports** do most of the domestic commerce, and at the port of **Chicago** alone more vessels enter and clear every year than at London and Liverpool combined. But in winter these ports are ice-bound.

(i) **New York** is the largest port of all, and does close on two-thirds of the whole trade, export and import, of the Union. In point of tonnage entered and cleared (12,000,000 tons), it is nearly as busy as London.

(ii) Another busy port on the east is the magnificent harbour of **Portland,** Maine. This is used by Canada as a winter-port when the St. Lawrence is closed up with ice.

(iii) The ports for special articles naturally lie near the producing areas. Thus **cotton** is shipped from **New Orleans, Galveston,** and **Savannah. Richmond,** on the James River, exports **tobacco. Tacoma,** on Puget Sound, and **Pensacola,** in Florida, are great **timber** ports. **Wheat** is exported from **Portland (Ore.),** and from most of the **Lake-ports,** especially Chicago.

(iv) The chief Lake-ports, which sweep up the wheat, the maize, the beef, and the pork of the western and middle States, are **Duluth** (Lake Superior), **Milwaukee** and **Chicago** (Lake Michigan), **Detroit** (near Lake Erie), and **Buffalo** (Lake Erie).

32. **Internal Communications.**—The United States, in addition to the splendid communication by water, has the longest series of railways in the world. Of **railway-lines** there are about 200,000 miles; and in the State of Illinois alone there are more railways than in all England. **Telegraphs** (200,000 miles) connect all parts of the Union, and there are 500,000 miles of **telephone,** both for local use, and connecting one city with another. A New York merchant, for instance, can by telephone inquire the price of wheat in Chicago, nearly a thousand miles away.

For CANALS, see Sections 12 and 14.

(i) There are three main railroads across the Continent:—(a) The **Northern Pacific**, from **Duluth**, at the western end of Lake Superior, to **Portland** (Ore.). (b) The **Union** and **Central Pacific**, from Pittsburg (through connections) to San Francisco. The Union passes through Chicago and Omăhá; the Central through St. Louis and Salt Lake City. They meet at Ogden (**40**), and then continue as one line to San Francisco. (c) The **Southern Pacific**, from **New Orleans** to **San Francisco**, *viâ* Los Angeles, in the south of California. These lines continue to the eastern seaboard principally through connections with Chicago.

CHIEF RAILWAYS IN THE UNITED STATES.

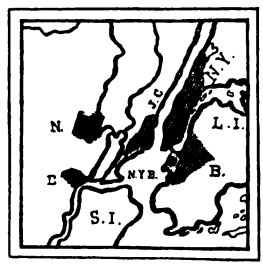
(ii) The Southern Pacific has a connection north to St. Louis, and north-east, through the cotton and tobacco States, to Richmond, and thence to New York. The east and north-east is covered with a close network of railroads. These lines penetrate through the easily accessible passes of the Appalachian Mountain system (**6**), and ramify in all directions over the valleys of the Ohio and Middle Mississippi.

(iii) The Americans own the quickest trains in the world. These run over

the New York Central railroad (the only four-track railway built) from New York to Buffalo. The distance, 437 miles, has been covered in 440 minutes, including three stops aggregating 15 minutes.

33. **Large Towns** (i).—The cities of the United States are growing much faster than the country, and about one-third of the total population lives in them. In 1790 there were only six cities with more than 8000 inhabitants. In 1890 there were fifty cities with more than 50,000 each. Four of these, **New York** (N.Y.), **Chicago** (Ill.), **Philadelphia** (Pa.), and **Brooklyn** (N.Y.), have each over a million inhabitants.

(i) **New York** (2500) is the largest city in the New World. It is also the first port and the first manufacturing city in the United States. New York is not one city, but two, and includes **New York** proper and **Brooklyn**, on Long Island, besides many outlying suburbs. New York proper stands on Manhattan Island, a narrow peninsula between the Hudson River and the East River, which is a branch of Long Island Sound. Its magnificent harbour receives most of the great steamship-lines from Europe. It is distant from Liverpool about 3100 miles, and the passage takes a few hours more than six days.



NEW YORK.

B. = BROOKLYN. E. = ELIZABETH.
J. C. = JERSEY CITY. N. = NEWARK.
L. I. = LONG ISLAND.
S. I. = STATEN ISLAND.

(a) 'Among the wonders of the city are the elevated railroads with their trains of cars continually flying up and down Manhattan Island; and the swarms of great steam ferry-boats traversing the East River and Hudson River.' See also pp. 74-78.

(b) New York is the most cosmopolitan of American cities. One-sixth of its population is Irish, and one-eighth German, and there are large colonies of nearly every civilised nation.

(ii) **Chicago** (1500) was, in the year 1830, a village of twelve families. One day it will be the biggest city in America, perhaps even in the world. Standing at the southern end of Lake Michigan, it is the commercial centre of both the Mississippi and St. Lawrence valleys, in which lies the granary of North America. It is the greatest lake-port in the Union, and exports wheat and meat. Some day ocean vessels of the largest size will visit its

harbours, as the smaller ones do to-day. The chief industries are meat-packing and agricultural instrument making; and 'in the meat-packing works ten pigs and five cattle are killed, cleaned, cured or tinned, and exported every minute.' The Chicago stockyards cover a space as big as the City of London, and receive over 8,000,000 head of livestock yearly. Her railways reach out into all parts of the west and east, and 1000 trains a day leave her stations.

(a) Chicago has just built what the inhabitants call a '600,000 dollar hog-house. This, the largest piggery in the world, can accommodate 220,000 pigs.

(b) 'The site of Chicago was a flat swamp along a bayou, and, in order to secure proper drainage, the city was raised ten or twelve feet at enormous cost.'

(iii) **Philadelphia** (1000) stands at the head of the navigation on the Delaware River. The name means the 'City of Brotherly Love,' and the place was founded by William Penn, a Quaker, in the year 1682 (**46**). It is the second manufacturing centre in the Union, and turns out textiles, metal goods, and carpets (the last, because Pennsylvania is one of the chief wool-growing States in the Union) (**26**). As a port, it is the outlet for the petroleum and iron of Pennsylvania, and it is visited by four lines of European steamships. At Philadelphia the Declaration of American Independence was signed in 1776. Up to 1825 it was the most populous city and the greatest commercial emporium in the Union, but the completion of the **Erie Canal** (**12**) turned away much of its tradè to New York.

(iv) **Brooklyn** (1000), on Long Island, is joined to New York proper by the longest and highest suspension bridge in the world. It has eight miles of water-front, covered with huge docks, basins, and wharves. Brooklyn is the fourth manufacturing city in the Union. (See also pp. 76-78).

34. **Large Towns** (ii).—Besides the four leviathan cities, the United States has twelve others all over 200,000 inhabitants. These are **St. Louis** (Mo.), **Boston** (Mass.), **Baltimore** (Md.), **San Francisco** (Cal.), **Cincinnati** (O.), **Cleveland** (O.), **Buffalo** (N.Y.), **New Orleans** (La.), **Pittsburg** (Pa.), **Washington** (D.C.), **Detroit** (Mich.), and **Milwaukee** (Wis.).

(i) **St. Louis** (500) is admirably situated on the Mississippi a little below the inflowing of the Missouri. It is the commercial centre of the middle Mississippi valley, and is the busiest river-port in the world. More than 2000 steamers leave its wharves every year. The chief trade is in flour, pork, iron, and machinery. The greater part of the town was wrecked by a cyclone (**15**) in 1896.

(ii) **Boston** (500) stands on Massachusetts Bay. It is the second port of the United States, being the outlet for New England manufactures generally, and has itself important woollen industries. Boston is the leading literary and educational city in North America, and has near it the old American university, **Harvard** (**24**).

(iii) **Baltimore** (500), on Chesapeake Bay, is the fourth port of the United States, following New York, Boston, and New Orleans. It exports **petroleum** and **tobacco**, and, as a great many railways from the west converge there, **grain**.

(iv) **San Francisco** (300), the 'Golden City of the West,' had no existence as a city before the year 1845. The Bay is the only good harbour from Mexico to Puget Sound, and the town exports **wheat, fruit, wool,** and **gold.** The trade with Australasia, China, and Japan centres here. There are now 25,000 **Chinamen** in San Francisco alone, with six joss-houses (temples), two theatres, and other strange Oriental features.' (See also pp. 82-86.)

(a) 'This is a wonderfully cosmopolitan city, where almost every civilised language may be heard. MEXICAN infantry marches down the streets to celebrate the anniversary of the independence of Mexico; ITALIAN societies commemorate the union of Italy; the CHINESE haul their divine dragon, 100 feet long, through the streets of their quarter (where 25,000 Chinamen dwell), amid an amazing din of fire-works, drums, cymbals, and flutes; and IRISHMEN celebrate or contemn the Battle of the Boyne.'

(b) 'The beautiful Bay, lined with white cities and reflecting great mountain ranges, is traversed by ocean steamships, ferry-boats, and sailing vessels, from the unwieldy junks of the Chinese shrimpers and the lateen-sailed feluccas of the Maltese and the Greek fishermen, to the towering white canvas of the clipper ships.'—KING'S *Handbook to the U.S.*

(v) **Cincinnati** (300), on the Ohio, kills the pigs that the maize of Iowa and Illinois fattens. Hence its nickname of 'Porkopolis.' It is an important river-port.

(vi) **Cleveland** (260) is a port on the south shore of Lake Erie. Like its namesake in Yorkshire, it smelts iron. It imports lumber and Lake Superior iron ore (**28**), and exports coal.

(vii) **Buffalo** (260) has the best harbour on Lake Erie. From Buffalo the Erie Canal (**12**) runs to the Hudson. The port handles vast quantities of grain, lumber, and livestock, and the town 'comes close to Pittsburg in its

iron and steel works,' and has also large oil-refineries. It is a great centre of trade between the province of Ontario in Canada and the State of New York.

(viii) **New Orleans** (250), the 'crescent city,' stands on an S-shaped bend of the Mississippi. Built upon delta swamps, the town is unhealthy, and yellow fever is prevalent. New Orleans is the largest **cotton-port** in the world, and exports also sugar, rice from the Carolinas, bananas, and Texan wool (**26**).

(ix) **Pittsburg** (250) stands on the Ohio. See section **28**.

(x) **Washington** (240), on the Potomac, is the capital of the United States. A 'city of magnificent distances,' it is filled with broad tree-planted streets, noble public parks, and grandiose marble buildings. It has no commerce (despite of its geographical advantages), but is devoted entirely to the business of government. Here the President has his official residence, the 'White House.' (See also pp. 72, 73.)

(xi) **Detroit** (205) lies on Lake St. Clair between Lakes Huron and Erie. The French gave its name of Detroit, or the 'Narrows,' because it lies on the narrow passage between the two lakes. The harbour is the best on the lakes, and a great trade is done in grain, pork, and copper from the Calumet Mines on Lake Superior (**28**).

(xii) **Milwaukee** (205), on Lake Michigan, is an important lake-port, and also sends grain-laden steamers direct to England without breaking bulk. Next to Chicago, it is the greatest **grain-port** in the States, and its wharves are lined with gigantic elevators for tipping the wheat directly into the ship. Milwaukee has a large German population, and hence, as that nation is fond of beer, it is celebrated for its breweries.

THE STATES AND TERRITORIES

35. The States and Territories of the Union may be divided into five groups. These are the **New England States**, the **Middle Atlantic States**, the **Southern** or **Gulf States**, the **Central States**, and the **Rocky Mountain** and **Pacific States**.

36. The **New England States** are six: **Maine** (Me.), **Vermont** (Vt.), **New Hampshire** (N.H.), **Massachusetts** (Mass.), and **Rhode Island** (R.I.), which is the smallest State in the

Union. The name of 'New England' was given to this group in memory of those old Puritan settlers (45) who left Old England for their religion's sake, and founded a New England over the seas. The Indians called these men Yengeese or English; and hence the name '**Yankees**.'

(i) Their **area** is a little larger than that of England with Wales (58,000 square miles), and their **population** is about 5,000,000. The climate is temperate; the hills are covered with timber (17); fishing and shipbuilding are actively carried on in the many bays and inlets of their coast; and the swiftly flowing rivers afford them abundance of water-power for their manufactures. **Manufactures** (29) of woollens, cottons, fire-arms, and cutlery are their chief industry; then come **lumbering, fishing,** and **shipbuilding.**

(ii) **Chief Towns,** etc.—**Boston** is the largest town and chief port. Manchester (N.H.) on the Merrimac, and Lowell and Fall River (Mass.) spin cotton; and the River Connecticut supplies power for the woollen and iron industries of Hartford (Conn.). 'Thread is a small enough matter, but it takes upwards of 30,000,000 miles of it yearly to keep their clothes on the American people.' Much of this is made at Willimantic (Conn.). Waterbury (Conn.) has a world-wide fame for watches.

The Americans have often been unjustly accused of counterfeit manufactures. On this subject, Réclus remarks that 'the manufactures of wooden oats, wooden nutmegs, and basswood hams are located precisely where they always were —in the imaginations of lumbering wits.'

37. **The Middle Atlantic States.**—These are seven: **New York** (N.Y.), **New Jersey** (N.J.), **Pennsylvania** (Pa.), **Maryland** (Md.), **Delaware** (Del.), **Virginia** (Va.), and **West Virginia** (W. Va.). With them goes the **District of Columbia** (D.C.), in which Washington, the capital of the United States, stands. All of them, except West Virginia, lie on the Atlantic Plain (5 and 7), and enjoy, on the whole, a temperate climate. But towards the south, in Virginia, for instance, where tobacco is grown, it is much hotter.

(i) Their **area** is equal to thrice that of England and Wales; and their **population,** which is the densest in all the Union, is over 16½ millions (90 per square mile). Their coal and iron, their fine harbours, and their easy communication with the West by rail, river, and canal, make **mining, manu-**

facturing, and **commerce** their chief occupations. **Pennsylvania** (**28**), above all, is the richest in mineral wealth, and, with its coal, iron, and petroleum combined, is one of the greatest mineral regions in the world.

(ii) **Chief Towns**, etc.—New York State is a State of great cities, and owns **New York**, **Brooklyn**, and **Buffalo**. Troy (60), on the Erie Canal, and Albany (100), which is the State capital, on the Hudson, are busy centres of inland trade. Pennsylvania can also boast its great cities in **Philadelphia**, **Pittsburg**, and **Allegheny**. The two last cities are the headquarters of the **glass industry** of the States. The pipe-lines of Pa., for the piping of petroleum, are laid two feet underground, and run 'straight away across the country, up hill and down, through villages and cities,' and even under rivers, for one line goes underneath the Hudson to a refinery in New York. New Jersey, though a small State, has several very large towns. **Jersey City** (170), opposite New York, manufactures leather, and **Newark** (180), iron, woollens, and glass. Jersey City is the terminus of the great trans-continental railways. **Paterson** (80) is the chief seat of the **silk** industry in the States. **Richmond** (Va.), the tobacco-port, was the capital of the Confederate States during the war of 1861-5 (**49**). **Wheeling** (W. Va.), on the Ohio, is the centre of a rich coal and iron region.

(a) The State of New York was first colonised by Dutchmen, and they named the present city of New York, 'NEW AMSTERDAM.' Some of the oldest and richest families in the city are of Dutch descent; and many names both in the City and the State still commemorate the Dutch occupation. One of the oddest is that of GRAMERCY SQUARE in New York City, which is a corruption of the Dutch 'KROMME ZEE,' or 'Crooked Lake,' and the square now covers the site of that little pond.

(b) The virtues of petroleum (from which vaseline is made) as a remedy for wounds and sprains, were long known to the Seneca Indians of Pennsylvania, and 'Seneca Oil' was a favourite medicine with the early white settlers. Oil was first struck at Titusville (Pa.) on the 25th of August 1859. 'What was soon known as the "oil region" was transformed from an almost unbroken forest into camps and towns, in which fortunes were made in a day, and often as quickly squandered.'

38. **The Southern States.**—These are eleven: **North Carolina** (N.C.), **South Carolina** (S.C.), **Georgia** (Ga.), **Florida** (Fla.), **Alabama** (Ala.), **Mississippi** (Miss.), **Louisiana** (La.), **Texas** (Tex.), **Arkansas** (Ark.), **Tennessee** (Tenn.), and **Kentucky** (Ky.). They lie along the Atlantic and Gulf Coasts, or in the lower part of the Mississippi basin. During the war of 1861-5, all these States, with one or two others,

upheld the cause of the South for maintaining slavery, as against the North, who wished to abolish it. While the war struck the manufacturing North very hard, it nearly ruined the planters of the South, who, by the abolition of slavery, not only lost their property in the slaves, but could no longer obtain sufficient labour for their plantations.

(i) The **area** of the Southern States is about six times that of the United Kingdom, and the **population** numbers about 16,000,000 (22 to the square mile). The South is the home of the **Negro** (19)—too often an idle citizen, who, when he has raised a small plot of pumpkins and water-melons, thinks he has done enough work for the year. The Southern States, favoured by a warm climate and a fertile, alluvial soil, are the '**Plantation States**,' and produce **cotton, tobacco, sugar**, and **rice**. Some of them, like Alabama (28), are also rich in **iron** and **coal**, and the possession of these minerals has enabled some of the Southern States to manufacture for themselves, in iron, cotton, and wool (26), instead of sending away their products to be made up elsewhere. The '**Blue Grass**' region of Kentucky is famous for its horses, as is **Texas**, the largest State in the Union, for its cattle and sheep. The Americans say that if France were set down in the middle of Texas a good deal of Texas would stick out round the edges. **Florida** is studded with 1200 clear lakes, and covered with pitch-pine forests and alluvial savannahs, on which oranges and pineapples are grown. The sponge and turtle fisheries, among the myriad islands that fringe the coast, are important.

(ii) **Chief Towns.**—**New Orleans** (250) is the largest city in this group, and is also the chief outlet for the most important product of the South—**cotton**. Other ports are Wilmington (N.C.), Charleston (S.C.), both noted ports for blockade-running (49) during the war, Mobile (Ala.), the best harbour in the Gulf, which has also water-communication by the Alabama River to the coal and iron-fields of Birmingham, and Galveston (Tex.). All of them ship cotton. Memphis (Tenn.) and Vicksburg (Miss.) send cotton-laden steamers racing down the muddy Mississippi. In Kentucky (='the land dark with blood,' so named from the frequent Indian raids of the past), the largest city is **Louisville** (160) on the Ohio. It 'leads the world in the manufacture of ploughs,' and is also the greatest world's market for tobacco, of which Kentucky (27) is the chief producing State in the Union. The chief **manufactures** of the South concentrate themselves in **Atlanta** (Ga.), a great iron-town and an important railway centre, and **Birmingham** (Ala.). This city is close to inexhaustible supplies of coal, iron, and limestone, and has every variety of iron-manufacture.

(a) 'It is recorded that Krupp, the Iron King of Europe, said: "Should fate drive me from Germany, I would go to Birmingham, Alabama."'

(b) 'The prosperous manufacturing enterprises of Georgia have risen since the war, favoured by admirable water-power, cheap labour, easy transport by rail or river, and the presence on the ground of cotton and wool, coal and iron.

(c) The Falls of the Ohio, a succession of rapids, block the navigation of that river at Louisville: these are evaded by a canal (10). 'At high water steamboats run the rapids, up and down. Upwards of 5000 vessels traverse the Louisville Canal yearly, bearing freight exceeding 1,200,000 tons; and nearly 2000 vessels ascend or descend the open river here, carrying 1,000,000 tons of freight.'—King's *Handbook to the U.S.*

(d) St. Augustine, Florida, is the oldest town in the States: it was founded by the Spaniards in 1565.

39. **The Central States.**—These—the 'Food States'—number twelve: **Kansas** (Kans.), **Missouri** (Mo.), **Illinois** (Ill.), **Indiana** (Ind.), **Ohio** (O.), **Michigan** (Mich.), **Wisconsin** (Wis.), **Iowa**, **Nebraska** (Nebr.), **Minnesota** (Minn.), **North Dakota** (N. Dak.), and **South Dakota** (S. Dak.). These inland States occupy nearly all the middle and upper basin of the Missouri-Mississippi. They are 'the **granary of the United States**,' and therefore the backbone of the country. The **climate** is one of **extremes**, with hot summers and severe winters, but the winters grow milder towards the south. On the whole they are a region of **prairies**—mostly treeless, but they possess a great wealth in **timber** round about the Great Lakes (17).

(i) The **area** of these States is more than six times that of the United Kingdom, and their **population** numbers over 22,000,000 (30 per square mile). With a fertile soil, rich in minerals and timber in the north, and possessing splendid communications by river, lake, and railway, these States are destined to be the richest in the Union. The chief **industries** are agriculture and grazing, mining, manufacturing, and lumbering. Vast quantities of wheat and flour, maize, pork, beef, cheese, coal, iron, copper, and timber are produced and exported. The chief centres of trade are **Chicago** (Ill.), **St Louis** (Mo.), and **Cincinnati** (O.).

(ii) **Chief Towns.**—Nearly every city in this huge farming region is a centre either of agriculture or grazing. But some of the more important

grain-towns are the twin cities of the west, Minneapolis and St. Paul (Minn.), Indianapolis (Ind.), and Kansas City (140) on the Missouri. Kansas City, too, packs pork, as does Omăhá (140), Nebr., which is the centre of the trans-continental railway system (32). North and South Dakota are great wheat-raising States, and contain wheat-fields forty-five miles long. But **Illinois** is the first State in the Union for wheat and oats, the second for coal, and the fourth for population. The largest **lumber-centres** are in Michigan; and Detroit, Saginaw, and Bay City are the chief of them. Among **manufactures**, agricultural instrument-making naturally takes a foremost place, and Chicago and Kansas City are noted for this. Near St. Louis is Iron Mountain, an important iron-deposit, and that town has large iron-industries. The coal and iron-fields of Ohio have for their centres Cleveland (34) and Toledo, on Lake Erie. Toledo, like most Ohio towns, is lighted with natural gas (28), and uses it largely in its iron-smelting industries.

40. **The Rocky Mountain States.**—There are six of these: **Colorado** (Colo.), **Utah** (U.T.), **Nevāda** (Nev.), **Idăho**, **Wyŏming** (Wyo.), and **Montāna** (Mont.). These States may be termed the 'jewel-box' of the Union, for it is in them that much of the gold, and most of the silver, is mined. The general elevation of this region makes the **climate** remarkably dry and bracing; and the **rainfall** is very slight,—in parts of Colorado and Utah almost none. But the soil when irrigated will grow anything. In **Colorado**, for instance, there is an irrigated area about as large as Yorkshire, fed by 35,000 miles of canals and ditches, and producing excellent crops. Much of the State of **Utah**, too, has been changed from a barren desert into prosperous farms; but, 'if the irrigation works should be suspended for but a few weeks, the whole country would return to its natural desert state.'

(i) The six States have an **area** equal to six times that of the United Kingdom, but a **population** of only about one million (three people per two square miles). They are thus the most thinly populated States in the Union, as the Middle Atlantic States are the denses. Nevada and Utah lie in the Great Basin (6), a region of salt lakes and sage-brush deserts. The rest lie on the central plateau of the Rockies, and through them runs the water-shed of the Gulf and Pacific Rivers. **Grazing** is the chief industry on the

Great Plains that lie along the eastern side of the Rockies ; but the rich mines of silver, gold, copper, and lead make **mining** the chief occupation among the mountains.

(ii) **Chief Towns**, etc.—The largest town in these States is **Denver** (110), Colo., which is a gold and silver-mining centre. The elevation of the town makes its climate specially beneficial in cases of consumption. The mineral wealth of this region is made clear by the names of some of the towns and villages—Gold Hill, Silver City, Eureka (*'I have found it'*), Ruby Hill, Bullionville, and Diamond. There is another incalculably rich silver and copper region in Montana, the heart of which is Butte City. **Salt Lake City** (U.T.), is the headquarters of a peculiar religious sect called the Mormons (**24**) whose leader, Brigham Young, brought them over the mountains to found a garden in the desert. Ogden (U.T.), a little to the north of the Great Salt Lake, is an important junction on the Union and Pacific Railway line (**32**). It is in the State of Wyoming that the celebrated **Yellowstone Park** (**18**) lies. In one lake in this park you can catch trout in cold water, and boil them in a hot spring next door.

41. **The Pacific States.**—These are three only: **California** (Cal.), **Oregon** (Ore.), and **Washington** (Wash.). These States occupy the whole of the western seaboard of the United States. The Pacific slope, along which they lie, is hot, but well watered, as its forest-clad mountains testify.

(i) Oregon especially, near the coast, has a very large rainfall. When the Californians have a long rainy season, they call it "Oregon weather"; and when a season of heat and dust invades the Sunset State, the people revile it as "the sort of climate they have down in California."' To the eastward and away from the coast, the three States are dry, as the mountain barriers keep off the rain (**17**). The **area** is about five times that of England and Wales, and the **population** about 2,000,000 (six per square mile). The Pacific States are rich in **wheat, gold, wine, fruit** (oranges, peaches, pears, raisins, and prunes), and **timber**. California owns the famous **Yosémité Valley**, where the Merced River makes a series of leaps down a gorge half a mile high. **Irrigation** has done wonders in the drier parts of California. Thousands of pounds have been spent in irrigation works in the south, 'and the fair green tides of cultivated vegetation are already advancing on the **Mohavé Desert** (**7**).'

(ii) **Chief Towns**, etc.—**San Francisco** (Cal.) is the largest. Near it is Sacramento, which owes its lively existence to the great gold-rush of 1849

(48); this replaced a sleepy Spanish community by a noisy, bustling, and rowdy population of miners. Los Angeles, also in California, is a town on the Southern Pacific railway (32), and has a delightful winter climate. Portland (Ore.) is a great wheat-port. Tacoma and Seattle (Wash.) ship timber and wheat. **Seattle** is at present the chief American port of departure for the adventurous goldseekers who are fighting their way to the **Klondike gold-fields** (43). From the moist climate of Oregon and Washington, the inhabitants are nicknamed 'Web-feet.' The rivers of both States (Snake and Columbia) swarm with salmon (11).

There are two climates in California—the seaside climate, with a low temperature and cold, damp winds, and that of the land, which is hot and dry. SAN FRANCISCO enjoys both of these, so that the proper costume for that town has been said to be 'a linen duster with a fur collar.'

42. **The Territories.**—There are at present five Territories: **New Mexico** (N. Mex.), **Arizona** (Ariz.), **Oklahoma, Indian Territory** (Ind. Ter.), and **Alaska** (Alas.). Any of these may be admitted to the full privileges of a State when it has reached a certain population (23). Two of them, Arizona and New Mexico, are 'organised' Territories. That is, they govern themselves in part, and send representatives to Congress (23), who may speak but not vote. The others are unorganised, and governed by Congress directly.

(i) **New Mexico** (**area**=that of the United Kingdom; **population**, 154,000) lies south of Colorado. The climate is very dry; but **irrigation** from the Rio Grande has made thousands of acres in its valley productive. The territory is rich in **minerals** (silver, lead, and quicksilver), but **sheep-farming** is the chief occupation. **Santa Fé** (*Fay*), on the south part of the western plateau, is the capital. Half of its inhabitants are Mexicans, who live in narrow little streets of low adobé (sun-dried brick) houses.

(ii) **Arizona**, the 'Land of Sunshine and Silver,' lies west of New Mexico. With an **area** only a little smaller than that of the United Kingdom, it has a population of but 60,000 (one person to every two square miles). The territory includes some of the desert-regions (7) of the United States, but can boast of the marvellous cañon-scenery of the lower Colorado (11). Rain is terribly scarce over the whole country; but the mineral wealth, in **copper** and **silver**, is large. **Tucson** is an important mining centre.

(iii) **Indian Territory** is a district a little larger than Scotland. It is set apart for the Red Indians, some of whom have taken up the peaceful art of farming, instead of wandering about the country, stealing cattle and murdering the white settlers. Its climate is very equable, and the soil is fertile and well watered. The territory possesses a large, but as yet not properly developed, coalfield.

(iv) **Oklahoma** (**area** a little larger than that of Ireland; **population** 65,000) is a slice cut out of Indian Territory. It was opened for white settlement in 1889. Before noon on April 22, 1889, thousands of intending settlers were drawn up in line on the boundary, ready, on a given signal, to rush across and take occupation. In the afternoon, a bank, with a capital of £10,000, was doing business; and 'within half a day the city of Guthrie arose, with 10,000 inhabitants.' The soil is fertile and well adapted to corn-growing; and 'the face of the country is diversified with long green valleys, forests of oak, and many flashing streams.'

43. **Alaska.**—Alaska (**area**=more than four times that of the United Kingdom) is that huge peninsula in the north-west of the continent, and is isolated from the rest of the United States. The Americans bought it from the Russians in 1867, and with it the **Pribylov Islands** in Bering Sea, on which the fur-seal (21) breeds. Through the middle of it flows the **Yukon** (1450 miles), of which 1000 miles are navigable by steamers. It is on the head-waters of the Yukon (in Canadian territory, however) that the now famous **Klondike** goldfields lie. **Sitka** and **Juneau**, the chief towns of Alaska, collect furs and can salmon.

(i) Alaska is a country of tundras and swamps, great pine-forests, and high snow-capped mountains, some of them volcanic. The Yukon and other rivers swarm with fish, and fur-bearing animals are numerous.

(ii) The popular name for Alaska is 'Uncle Sam's Ice-box,' and the subsoil, except in the rain-sodden archipelagoes of the south, remains perpetually frozen. 'Many times during the hot summer, while the temperature is from 90° to 100° in the shade, and there is no night to bring relief and rest, the traveller may brush away the moss at his feet and find solid ice underneath.'

(iii) To the **Klondike goldfields**, situated close on the American and Canadian boundaries, there are two chief routes, both starting in American

territory. One is by stern-wheel steamer, 1000 miles up the **Yukon** to Circle City (Alas.), which is itself a gold centre; 200 miles further up the river takes you to **Dawson City**, on the Klondike fields. The other route starts from **Juneau**, and goes to the head of a long fiord called the **Lynn Canal.** Thence the road leads, amid fearful difficulties, over the snow-covered Chilkoot Pass; and after that for 600 or 700 miles the journey is a succession of boat-building, carrying, lake-ferrying, and rapids-shooting, until you get to the main waters of the Yukon.

(iv) Though the Klondike field is at present the most noted in north-west America, yet it is certain that there are gold-deposits all over Alaska, and it has been said that the 'gold mines of Alaska will produce enough treasure to pay off the (American) National Debt.' Near Juneau there are extensive gold-workings.

(v) The following is an account of the life of a **goldseeker** on the **Upper Yukon** :—'In summer the thermometer will go up to the eighties, and the biggest and most voracious mosquitoes will devour you. In the winter the thermometer will go down to 70 or 80 degrees of frost, making work and travel exceedingly difficult. Though the ground is frozen down to the rock-bed, work is not suspended. Fires are lighted upon the gravel beds to thaw them out, and then the "dirt" is excavated; another fire is lighted, and so the slow process goes on in bitter cold and Arctic darkness. Then comes the brief summer: the streams are released from their icy band, and there is a supply of water to wash out the accumulations of the winter's work. Then it is that the miner sees the fruit of his toil, and is satisfied or otherwise. The days are one continuous sunlight, and the light and water last for three months—from the middle of June to the middle of September. Then the long winter drudgery begins again.'—Vancouver Correspondent of the *Morning Post.*

44. MAP-PRACTICE OF THE CHIEF TOWNS ON THE CHIEF RIVERS AND LAKES

NOTE.—The name of the river or lake is given first. Towns in capital letters (as NEW ORLEANS) over 200,000 inhabitants.

(i) Towns of the **Central River** basin :—

(a) Alabama—**Mobile.**

(b) Lower Mississippi—**Memphis, Vicksburg, Baton Rouge,** NEW ORLEANS.

(c) Ohio—PITTSBURG and **Allegheny, Wheeling,** CINCINNATI, **Louisville.**

(d) Upper Mississippi—**Minneapolis** and **St. Paul,** ST. LOUIS.

(e) Missouri—**Omaha, Kansas City.**

(ii) Towns on the **Western Rivers** :—

(a) Columbia—**Portland.**

(b) Sacramento—SAN FRANCISCO (on the bay at the mouth), **Sacramento City.**

(iii) Towns on the **Atlantic Rivers** :—

(a) Merrimac—**Manchester** and **Lowell** in Massachusetts.

(b) Connecticut—**Hartford.**

(c) Hudson—**Troy, Albany,** NEW YORK.

(d) PHILADELPHIA on the Delaware ; WASHINGTON on the Potomac ; **Richmond** on the James ; **Savannah** on the Savannah.

(iv) Towns on the **Great Lakes** :—

(a) On Lake Superior—**Duluth, Calumet, Marquette, Sault St. Marie.**

(b) On Lake Michigan—MILWAUKEE, CHICAGO.

(c) On Lake Huron—**Saginaw** and **Bay City.**

(d) On Lake Erie—DETROIT (on the Detroit River), **Toledo,** CLEVELAND, BUFFALO.

(e) On Lake Ontario—**Rochester, Oswego.**

45. Table of Distances in United States

Standard—**Land's End** to **Shetland Islands**, distance **750 miles.**

Detroit to South of Hudson Bay.	South of Lake Winnipeg to Rocky Mountains.
Detroit to New York.	South of Lake Winnipeg to Chicago.
Detroit to Charleston.	Cape Hatteras to South Florida.
New York to Charleston.	

Mean north to west breadth of Alaska.

All these pairs the same distance apart—750 miles.

46. Difference of Time between United States and Greenwich

When it is 12 o'clock midday at Greenwich, the time is at

	A.M.		A.M.
New York, . .	7.5	Omaha, . . .	5.36
New Orleans, . .	6.0	Denver, . . .	5.0
Pittsburg, . .	6.44	Salt Lake City, .	4.56
Chicago, . . .	6.10	San Francisco, . .	3.51

Illustration of the above table:—The Oxford and Cambridge boat-race is rowed in England, say at 3 P.M. The New Yorkers therefore hear the news, by telegraph, at 10.5 A.M., or nearly five hours in time before it is rowed. The people of San Francisco hear of it at 6.51 A.M., probably before the crews have got out of bed.

47. Table of Chief Minerals in United States

Mineral.	Chief Localities.	Notes.
Coal, . .	Pennsylvania to Alabama, and round St. Louis.	Chief coal centre: Pittsburg. Coal area about = British Isles.
Iron, . .	On coal-fields, and on Lake Superior (Marquette).	Chief iron-manufacturing centres: Pittsburg, Buffalo, and Birmingham (Ala.).
Petroleum, .	North-west Pennsylvania and Ohio.	Petroleum area nearly = Wales. Oil run in pipes to shores of Atlantic and L. Erie.
Natural gas, .	Ohio and Pittsburg district.	Used for fuel. Specially suited for iron-smelting and glass-making.
Gold, . .	California and Nevada.	U.S. second gold-producing country in world.
Silver, . .	Colorado, Nevada, and Utah.	U.S. largest producer in world.
Copper, . .	Michigan (Calumet), Arizona, and Montana (Butte City).	,, ,, ,,
Lead, . .	Colorado (Leadville).	,, ,, ,,
Quicksilver, .	New Almaden (Cal.).	,, ,, ,, Compare quicksilver mines at Almaden in Spain.

Conclusions from the above table :—

(i) The United States possess in abundance nearly every useful and valuable mineral to be found in the world, except **tin.** But this has been discovered in the Black Hills (S. Dak.), and in Texas. Hence the import into the United States of tin and tin-plate, which is at present a large one, will probably cease.

(ii) **Coal** is found either (a) along with i- [illegible] lities, whence the transport of the iron to the coal-fields [illegible] p. Hence the manufacturing importance of the Unit-

48. Table of Chief United States Exports

Name.	Chief Producing Areas.	Remarks.
Cotton, . .	Southern States.	Texas largest producer. Cotton shipped from New Orleans, Galveston (Tex.), Mobile, Charleston, etc.
Provisions, . (Meats and dairy products.)	Cattle-ranches from 100° to 120° west. Pigs from Iowa to Ohio.	Chief centres of meat-packing: Chicago and Cincinnati. Pigs at Chicago converted into 'ham, sausages, hair-oil, and book-binding in about fifteen minutes.'
Breadstuffs, . (Wheat, flour, etc.)	Basin of Middle Missouri, and Pacific Slope.	Flour ground at Minneapolis. Shipping centres: Lake Ports and Portland (Ore.).
Petroleum, .	North-west Pennsylvania and Ohio.	U.S. exports regulate the world's supply.
Live-stock, . .	See sections 18 and 26.	Shipped from eastern ports to Liverpool and Deptford.
Iron and steel manufactures,	Coal and iron fields.	Shipped from eastern ports, especially Philadelphia.
Timber, . .	North-eastern and Pacific States, Lake region and Florida.	Shipped from Lake Ports eastwards, Pensacola (Fla.), and Tacoma (Wash.).
Tobacco, .	South-east of Alleghanies and Kentucky.	Richmond chief shipping port: Louisville chief collecting centre.

Remarks on the above table :—The United States are—

(i) The first **cotton-merchants** in the world.

(ii) The first **grain** and **flour-merchants** and **provision-dealers.**

(iii) The largest **tobacconists.**

49. Chief Imports into the United States

Imports.	Whence from.
Coffee, ...	Brazil.
Sugar, ...	West Indies, Hawaii, Brazil, Germany (beet sugar).
Silk, ... (Raw and manufactured.)	Japan, France, Germany, and Great Britain.
Wool, ... (Raw and manufactured.)	Australia, Great Britain, France, and Germany.
Chemicals, ...	Great Britain.
Linen and jute, . . . (And manufactures of.)	Great Britain.
Cottons, ...	Great Britain.
Hides, skins, and furs, .	Argentine Republic, British East Indies.
Iron and steel m'factures, .	Great Britain.
Fruits and nuts, . .	Spain, Italy.
India-rubber and gutta-percha, ...	Brazil.

Conclusion from the above table :—The United States are—

(i) For **food,** self-supporting.

(ii) For **luxuries,** forced to import.

(iii) For **raw materials,** nearly self-supporting (except wool, silk, etc.).

(iv) For **manufactures,** nearly self-supporting. [illegible] trade with Great Britain.

50. United States Trade with Great Britain

(Average £123,000,000 annually, or over **one-third** of the total foreign trade.)

(i) Chief **exports** from the United States :—

(Principally a '**food**' **trade.**)

	Millions.		Millions.
Cotton—average yearly value,	£29	Maize,	£3¼
Grain and flour,	£22	Tobacco,	£2½
Bacon and hams,	£7	Leather,	£2½
Cattle,	£6	Petroleum, Lard, Cheese,	£2
Fresh beef,	£4		

(Average annual value of *all* exports, £98,000,000.)

(ii) Chief **imports** into the United States :—

	Millions.		Millions.
Iron,	£5	Linens,	£2½
Cottons,	£2½	Woollens,	£2¼

(Average annual value of *all* imports, £25,000,000.)

Conclusion from the above tables :—The interests of Great Britain and of the United States are bound as close as possible together, commercially, and therefore politically. Hence, what is Britain's interest is, in the long run, that of the United States. *E.g.* It is Britain's interest to see that she is not excluded from any Chinese port to which other foreign powers, as Russia, Germany, or France, have access, and it is that of the United States as well.

HISTORICAL SUMMARY

51. **Early History.**—North America had been visited in the ninth and tenth centuries by the **Norsemen**, who had given to Massachusetts the name of Vinland, or the 'Land

of Vines.' **Columbus** had first sighted American soil at San Salvador, one of the Bahamas, in the year 1492; and, as early as 1534, the adventurous French navigator, **Jacques Cartier**, had sailed up the St. Lawrence. The ultimate result of his voyage was the founding of a French settlement at Quebec in the year 1608, and the spreading of the power of the French over the valley of the St. Lawrence, as far as the Great Lakes. But the first settlement of what was to become the United States was due to **English** enterprise.

If we look at some of the names of the United States as they are to-day, we shall learn a great deal about the early history of the country. First there is **Virginia**. Sir Walter Raleigh attempted to found a colony there, and named it after Elizabeth, the Virgin Queen. But his plan came to nothing; and this, the first of the English colonies in North America, was not regularly colonised till 1606. African slaves were brought to it, the cultivation of tobacco was started, and the young settlement, to which, after the Civil War in England, many a cavalier fled for refuge, throve apace. Then there are the **New England** States. In the year 1620 a small band of 102 **Puritans**, willing exiles from their country for conscience and religion's sake, landed from their ship, the *Mayflower*, in Cape Cod Bay. Plymouth was the last point in English soil at which they had touched, and New Plymouth was the name they gave to their new home in American soil. Other emigrants followed, and thus the foundations of the New England States were solidly laid.

52. To the south of New England another English colony was started in 1628. This was **Maryland**, founded by the Roman Catholic Lord **Baltimore**, and named in honour of Henrietta Maria, the Queen of Charles I. As the New England States were the refuge of the oppressed Puritans in

England, so Maryland became an asylum for the persecuted Roman Catholics of Ireland. Next **New York** became an English town. Previously it had been in the possession of the Dutch, who called it New Amsterdam. But in the year 1664, the Dutch Governor surrendered it to an English squadron, and Charles II. granted it to his brother James, Duke of York; and the name was changed accordingly. Towards the end of the seventeenth century **Pennsylvania** sprang to life. Charles II. owed William Penn, the Quaker founder of this State, £16,000, and in discharge of the debt the King granted him a huge tract of land west of the Delaware River to be his absolute property. Penn treated the Indians of the country fairly. Bit by bit the land was won from savagery: forests were cut down, farms were laid out, and this province became the most populous of any on the eastern seaboard. **Philadelphia**, the 'City of brotherly love,' was founded by Penn to be the capital of his province, and so named 'in token of the feeling, which, it was hoped, would prevail amongst the inhabitants.' The **Carolinas** were founded in the beginning of the reign of Charles II., and christened after the Latin form of that monarch's name—**Carolus**. **Georgia** was a colony separated from the Carolinas during the reign of George II., and was bestowed on one General Oglethorpe, to be 'a colony for the poor and helpless.' But few of such came there, and Georgia and others of the southern colonies were used as countries to which English criminals were transported, there to work as slaves upon the plantations. The whole of the eastern seaboard, except Spanish Florida, was now English. On the north lay the French, and behind the eastern colonies the venturesome French *voyageurs*—traders and fur-trappers—had pushed down the Mississippi in frail birch-bark canoes, and claimed the whole of the country

from the Great Lakes to the Gulf of Mexico as French. To this huge, though undefined, stretch of territory they gave the name of **Louisiana**, in honour of their king, Louis XIV. The town of St. Louis, too, was named after him. The present State of Louisiana, of course, covers but a small part of the huge country to which the name was first given.

53. **The War of Independence.**—The United States first began to exist on the Fourth of July 1776, when they formally declared their independence of Great Britain, whose colonies they were. Under their great leader and first president, **George Washington**, they warred against the Mother Country from 1775 to 1782, and ultimately England was forced to acknowledge their independence in the year 1783. England had unwisely tried to force taxation on the Americans—taxation without representation. This the sturdy settlers—the Puritans of Maine and Massachusetts and the aristocratic families of Virginia and Maryland—would not endure: and war was the result—war that has robbed England of what ought to be her most glorious colony, or at least a sister empire.

The States that took up arms against the might of England were only thirteen in number, with a population of about 3,000,000. Their names were Massachusetts, New Hampshire, New York, Connecticut, Rhode Island, Pennsylvania, New Jersey, Maryland, Delaware, Virginia, North and South Carolina, and Georgia; and their number is still commemorated in the thirteen red and white stripes that form part of the American national flag. Of stars on the flag there are forty-five, that being the present number of the States.

'In 1790 the thirteen States had an area of about 350,000 square miles, and a population of a little less than 4,000,000. A century later the area was nearly eleven times as great and the population about seventeen times as great, or between 65,000,000 and 70,000,000.' MARCUS BAKER.

54. **The Growth of the Union.**—By the year 1763 all Canada had become an English possession by conquest from the French. After the War of Independence England made over to the United States all the territory she had south of the Great Lakes, and from that time the Republic began steadily to increase its borders. In 1803 Napoleon sold **Louisiana** to the Americans, for fear lest it should fall into the hands of the English. Twenty years later the Spanish government reluctantly handed over **Florida**; and in 1845, **Texas**, which had previously risen against and thrown off the yoke of Mexico, was admitted into the Union. A year after, Great Britain agreed with the United States to fix the northern boundary in the west along the forty-ninth parallel of latitude, and thus, with the purchase of **Alaska** (43) from the Russians, the boundaries of the United States, as at present established, were complete.

Then began the opening up of the '**Great West.**' From 1842 to 1849 Captain Fremont was exploring the desert regions of the Salt Lake basin and the Pacific coast. 'Fremont was the first white man who visited this locality (then a Mexican lake) in 1842, reconnoitring the islands in a rubber boat.' In 1847 the **Mormon** community had founded their new 'Holy Land' in the same place. But the event which helped more than anything else to develop the west and centre of the United States was the **discovery of gold** in California in the year 1848. California ceased to be a dreamy pastoral state under Mexican rule, and a population of under 10,000 grew to one of 1,200,000. Train after train of wagons crawled across the Great Plains from the east, attacked a hundred times by the fierce horsemen of the Pawnee Indians, but always pressing steadily forwards to their golden goal. The land along their route became known, its vast farming

possibilities were recognised, and so the conquest of the West was begun.

55. **The Civil War.**—The claims of France and Spain on various parts of the United States had been settled. The opening up of the various States had gone on peacefully, as far as resistance from white nations was concerned. The Indians had in most places offered a determined opposition to the tide of settlement, but the Americans, at no time scrupulous of the rights of those first inhabitants of their soil, had crushed their brave but useless resistance. But a more formidable enemy to the Republic rose up within itself. In 1860, eleven of the Southern States, who were all owners of slaves, determined to separate themselves from the Northerners, who wished to abolish slavery. A bloody war followed, and lasted from 1861 to 1865. At first everything went against the North by land, and at sea the Southerners built a fast cruiser, the **Alabama,** in an English port, and swept the Northern commerce off the Atlantic. The Confederates, as the Southerners were called, set up a government for themselves, and made **Richmond** in Virginia their capital. Then the North made a superhuman effort. The Confederates were decisively defeated at Gettysburg (Pa.) and Vicksburg (Miss.), and these two battles proved the turning-points of the war. The bloody strife came to an end in 1865, when the last Confederate army surrendered to the Northern troops. The war cost the American nation some £2,000,000,000 and the lives of 600,000 men. But it settled for ever the question whether the American Republic was to break up into a number of scattered, and therefore comparatively weak, independent countries, or was to remain the richest and the greatest united nation that the world has ever seen.

(i) The **Alabama**, the Southern cruiser, was built in Liverpool, and, before the British government could arrest her, it being well known that she was intended for the Confederate service, the vessel had slipped out to sea. She took in her armament and stores at the Azores, and in a few months had paralysed the Northern shipping, burning every ship she met. She pursued her destructive career for two years, at the end of which time she was fought and sunk in the English Channel by the Northern war-vessel Kearsarge. For allowing the Alabama to leave an English port, the British government was compelled to pay the Americans at the end of the war £3,250,000, in compensation for the damage which the Southern vessel had inflicted on Northern shipping.

(ii) Another way in which this war affected England was by producing the **cotton famine** in Lancashire. The Southern States of America supplied the cotton-spinning districts of England with nearly all their cotton. The war cut off the supply, for the Northern cruisers blockaded all the Southern ports; and very wide-spread distress was the result. This gave rise to the **blockade-runners.** Swift ships with a light cargo, under cover of night evaded the Northern blockade, and ran into the Southern ports, Wilmington and Charleston especially, where they loaded up with cotton. The risks were great, but the profits were enormous. The blockade-runners took in cargoes of articles of women's dress and other things, which sold like wildfire, and took out cotton, which cost them twopence a pound on the spot, but which they could sell in Liverpool for half-a-crown. Many of the blockade-runners were captured by the Northern cruisers, as they groped their way along the coast in dark, misty nights; and many also were deliberately run ashore or burnt to escape the cruisers.

56. DATE CHRONICLE OF THE UNITED STATES

10th century	**Norwegian** settlement in Vinland (Massachusetts).
1492	**Columbus** first touches American soil at **San Salvador** in the Bahamas.
	America is named after Amerigo Vespucci, who landed in Venezuela in 1499.
1606	**Virginia** colonised, and named after Elizabeth, the 'Virgin Queen.'
1620	The **Puritans** land from the *Mayflower* at **New Plymouth** (Mass.).
1664	New Amsterdam renamed **New York.**

1682	French explorers push down the Mississippi, and settle in **Louisiana.**
1775-82	**War of Independence** against Great Britain. **George Washington** the American leader.
1807	First river-steamer on the Hudson—plying from New York to Albany.
1840	**Cunard Liners** connect England and New York.
1849	**Gold-rush** to California.
	This did much to open up all the West on the route to the gold-mines. Those who came to find gold and found none remained to till the ground.
1859	Oil (petroleum) first struck at Titusville (Pa.).
1861-5	**Civil War** between North and South.
	Northerners victorious; slavery abolished.
1866	First trans-Atlantic **telegraphic cable** from Valentia Bay, in Ireland, to Trinity Bay, in Newfoundland.
1867	**Alaska** purchased from Russia.
1869	First **trans-continental railway** from **Omaha** (32) to **San Francisco** (41).
	Eastward connections already made up to Omaha.
1871	**Yellowstone National Park** founded by an Act of Congress.
	'Dedicated and set apart as a public park or pleasure-ground for the benefit and enjoyment of the people.'
1889	Land 'boom' in **Oklahoma** (42).
1896	England accepts the mediation of the United States in her quarrel with Venezuela about the disputed boundaries.
1897	**M'Kinley** President of the United States.

57. The Great Geysers of Yellowstone Park

Many of the States in America have set apart 'parks' for public amusement—fertile valleys, richly wooded and full of clear-running streams, places that no one would have thought of looking for in the midst of howling wildernesses.

They are to the waste-grounds of North America just what the oases are in the immense sandy stretches of the Sahara. Colorado, for instance, has two of these parks, of which the most famous and the most visited is the 'Garden of the Gods,' a quiet valley strewn with rocks that take every sort of fantastic shape, like those natural ruins in the Bad Lands of Nebraska (7).

But the National Park of the Yellowstone River—fitly called the 'Land of Marvels'—surpasses all the others in natural wonders and variety of scenery. It lies in the north-west of Wyoming, near the borders of Montana and Idaho, among a wild, tangled mass of lofty mountains, which contain the head-waters or tributaries both of the Columbia and Yellowstone rivers. In the midst of this rises a savage plateau, seamed with cañons of vast depth, with frowning precipices, and studded with countless lakes and waterfalls, while all around it peaks of extinct volcanoes rear their silent heads to the sky. The greatest marvel in this land of marvels is the geysers—hot springs, either continuous or intermittent, which burst forth by hundreds among the rocks with awe-inspiring rumblings. These boiling springs of muddy and sulphurous water spout up to heights varying from two to fifty feet. The valley of the Firehole is the principal scene of geyser activity, and some there, like 'Old Faithful' and the 'Giant,' reach a height of close on two hundred feet. The following account has been given of an eruption of the last named. 'Above a rocky ledge lay the spouting spring which we called the "Giant." Its basin is surrounded by a thick curtain of rock, and the waters, as they gush down, have deposited on it solid beds of stalagmite. When an eruption is close at hand, the basin gradually fills with boiling water to within a few feet of the rim; then all of a

sudden the water is violently agitated, and immense clouds of vapour are shot five hundred feet into the air. The great mass of the water, twenty to twenty-five feet broad, rears up in a gigantic column ninety feet high; while from the centre of that pillar of water shoot out five great jets, which, lightly supported one upon the other, reach the marvellous height of five hundred feet from the ground. The very earth trembles under this downpour of water, which pours away with a sharp hissing sound; rainbows encircle the tops of the water-jets with dazzling brightness, and on each rests an aureole shot with divers colours. The rush of water hollows out and bears away the thin layers of deposit on the sides of the basin, and a boiling flood pours down the slopes into the river. This geyser is one of the most colossal, the most majestic, and the most awe-inspiring of any that exist on the globe. After having played in this way for twenty minutes, the geyser gradually dies down, the water in the basin disappears, the clouds cease to float over the top, and all is quiet. The "Giant" burst forth thrice that afternoon. Its waters are of a deep sea-blue, limpid and marvellously beautiful. At the actual moment of eruption, when the jets of water reached their highest pitch, their waving motions, their forceful yet fairy-like spring, the light and airy way they played in and out the sun's rays, as they rose and fell, formed a spectacle that no description could do full justice to.'

58. The Big Trees of Mariposa[1]

Mariposa forms, so to speak, a glorious vestibule to the great valley of the Yosemite (11), and it is here, some

[1] Abridged from a German traveller's account.

6500 feet above the level of the sea that the giant trees are to be seen. They do not form a separate group by themselves, but are scattered, in little clusters, all over the forest, about one or two miles apart. Botanically they are known as Sequoia gigantea; the English have given them the name of Wellingtonia; but the patriotic pride of the Americans will have none of this name, and prefers the title of Washingtonia.

Mariposa is not the only place where these 'Big Trees' are to be found: there are others at Calaveras in the same State of California. But at Calaveras, the beauty of the surroundings is vulgarised by hotels, theatres, tea-gardens, and merry-go-rounds; whereas at Mariposa one is face to face with Nature alone. The forest of Mariposa and the Yosemite Valley have been presented by the United States government to the State of California, which is to preserve them as a national park, and to see that no damage is done to these natural wonders.

The first of these forest giants which met our eye was a colossus stretched upon the ground. By the help of a ladder we clambered on to the trunk, which is large enough for a carriage to turn round on, and walked about just as if we were on a road. This tree, which is known as the Colossus, is near the roots 32 feet thick and 102 round. There are only 150 feet of the trunk left, and the bark, which has almost entirely disappeared, is a foot and a half thick. Fire has destroyed most of the trunk, but one can still see the deep furrow in the soil which the tree cut as it fell. When the tree stood upright, it must have been 40 feet thick, and 120 round; and its height (over 400 feet) came near that of the tallest cathedral spire in England. The age of this giant is reckoned at 3400 years. The figures seem so

startling, that I hesitate to give them; but there can be no doubt of them, for the circles of growth in the trunk are a certain evidence of their truth. Indeed the largest sequoias date back to long before the Christian era: they were saplings in the time of Moses, and trees of some size when Solomon was building the Temple at Jerusalem.

The branches of the sequoias have not the grace of those of other cone-bearing trees: they are too massive, too thick-set. Quite often these giant limbs, the lowest of which shoots out of the trunk 80 or 100 feet up, are as thick and strong as what would elsewhere be called an enormous forest-tree. One generally notices that the extreme tops of the trees are broken off, no doubt by the fierce gales of century after century. Many of them, too, have been attacked by terrible conflagrations, and the devastating hand of fire has robbed them of much of their beauty.

Our cavalcade trotted on for several miles across the ancient forest, gazing with admiration at the fathers of the forest, now at one that stood in lonely grandeur, and now at a group of five or six. Our road often took us right through one of these monsters, the heart of which had been eaten out by fire; sitting upright on the saddle, the great tree stretched over our heads like a mighty arch. The handsomest of the sequoias bear their names on their trunks engraved in gold letters on a marble tablet. It is certainly useful to give names to the trees, for otherwise it would be impossible to speak of them or to compare them one with another. But the Americans, with their usual want of taste in nomenclature, have chosen for these venerable giants most inappropriate titles—naming them after certain newly rich men and silly women, who have sought to immortalise themselves in this way. Could anything be more ridiculously grotesque

than to give such names as 'Scott,' 'Emperor Norton,' 'Miss Emma,' 'Brigham Young and his wife,' to great trees which were springing from the soil in the time of the Pharaohs? Some of them, however, are happier in their titles, and are called after the different states, like Ohio and Illinois, while three of them bear the appropriate title of the Three Graces. The trees so called are three magnificent giants, which stand in a circle 275 feet round, and form a gloriously picturesque group. Between them one could build a lofty cathedral, and their highest branches would completely hide the steeple from view.

59. The Last Great Indian Chief

The Sioux,[1] who call themselves Dakotas, were at one time the most numerous, and are still the most warlike, of the Indian tribes in the United States. Their warriors numbered 50,000, and they carried the terror of their name far and wide. Neither the English and the French in the eighteenth century, nor the Americans in the nineteenth, were ever able to overcome that proud nation, which clung so jealously to its soil. Their domain, which was spread over the upper valley of the Missouri, was greater than the whole of France, Germany, and England put together. In 1837 and 1851, by two formal treaties with the United States, they consented to draw the line of their eastern frontier just behind the State of Minnesota. But the American agents (who were white officials charged with the special duty of looking after and dealing with the Indians) did not carry out the provisions of the treaty. A war broke out which lasted for eight years; and in 1862 a fresh agreement was made, forbidding the further advance of white settlement, to which

[1] Pronounced '*Soo*'

the white settlers paid no attention whatever. Again the Sioux protested, but no one would listen to their protest. Then they took up arms; the farms of the settlers were robbed and laid waste, and a thousand of them were killed and scalped. For this outbreak the American general, Harvey, exacted a cruel punishment (thirty-eight of the rebellious red men were hanged on one scaffold); and the treaty of 1868 conceded to the vanquished, as an inviolable reserve, all Dakota west of the Missouri and south of the forty-sixth parallel of latitude.

But the United States Government could not or would not stay the advance of emigration in Dakota—an advance which was encouraged by the construction of the Northern Pacific Railway and by the mineral discoveries in the Black Hills. Round the Indian reserve the number of farms increased, and clusters of villages—Rapid City, Bismarck City, Mandan, etc.—sprung up. The Sioux refused to let the railway pass over their territory; they protested against the invasion of the soil of the Black Hills, which was a country sacred in their eyes; and they claimed an indemnity of £10,000,000 from the American adventurers. Their complaints and their claims were not listened to, and once more they took up arms under the orders of Sitting Bull, one of the bravest and most popular of their chiefs. He had to his credit twenty-three warlike exploits, representations of all of which were embroidered on his buffalo robe. When General Crook summoned him to surrender, he answered, 'Come and take me; I'll wait for you.'

The war was fierce and bloody, and lasted for five years. General Sheridan held the chief command over the American troops. One of his subordinates, Custer, was lured by Sitting Bull into a narrow defile. Custer had with him only

1100 men, and of the Sioux warriors, as it afterwards turned out, there were 9000, concealed along the sides of a thickly wooded gorge. The whooping savages poured down resistlessly upon the American troops, and of the whole force only a single scout escaped alive to tell the tale of the disaster. A vastly superior body of American troops was instantly on his track, and, worn out by the merciless struggle, the great chief had to seek refuge in Canada. He could only be prevailed upon to return in 1881, when he came back with forty-five men, sixty-seven women, and seventy-three children, which was all that was left of his once powerful clan. He said to the American agents, 'The government has already made fifty-two treaties with the Sioux, and has not observed one of them.'

Nor was the fifty-third respected either. The Sioux were promised that they should each receive three pounds of beef every day, but the Indian agents, whom the government had appointed to look after the reserves, reduced that ration to one ox for thirty men, and that was to last eighteen days. In one year, wrote a missionary, the rations of the Rosebud reserve alone had been diminished by 1,500,000 lbs., and the Sioux complained bitterly of hunger. The Sioux had the hunger, and the agents had the price of 1,500,000 lbs. of food in their pockets.

Government neglect, the slowness of Congress in voting funds, the peculation and extortion of the agents—everything combined, along with the want of food and clothes, to make the situation of the Sioux, cooped up in the Dakota reserves, perfectly intolerable. Other Indian tribes were in a like desperate case. At one 'reserve' of another tribe there was only £400 to meet the wants of 1200 souls through six months of a winter which was already promising to be severe

—a daily allowance of a halfpennyworth of food for every man, woman, or child. The same miserable fate—slow starvation—stared all the tribes in the face, and for all of them but three courses remained: to give themselves quietly over to death by starvation, to go on the warpath once more, or to sell their territories. The government would not give them food, and they could not get it themselves by hunting, for the buffalo had by this time disappeared. The Crows parted with a third of their reserve, an area as big as Huntingdonshire, for £200,000. But the Cherokees refused four millions which the American Company-promoters offered for their domains, and the Sioux would not hear of any offer being made at all for land which the United States Government had solemnly promised should be theirs for ever. War was the only resource, and for war the tribes began to prepare themselves. A mysterious Messiah, his face always veiled, preached a holy war to the tribes, giving himself out to be a messenger sent by the Manito, or Great Spirit. By night, in the forest-glades, the Indians met to dance their sacred dances, and to fit themselves for meeting the common enemy. Sitting Bull put himself at their head, and distributed among them Remington and Winchester carbines and revolvers, which they had hidden away in their encampments.

Generals Miles and Forsyth were charged with repressing this dangerous uprising. They were greatly assisted by the Corps of Scouts, who are recruited among the Indians themselves, and are handsomely paid to serve as policemen in time of peace, and as guides when war breaks out. The Americans had also in their ranks a detachment of Indian 'bucks,' half-breeds born in the reserve; these men are incapable of settling down to a quiet life or steady farm-work, but merely live on the rations of the tribe, and by raiding

the farms of the white settlers in the neighbourhood. The famous Cody, too, whom all London knows by his nickname of Buffalo Bill, offered his services in the crushing of the Sioux rising, and brought with him thirty or forty Indians of the Ogalalla tribe, a branch of the great Sioux nation, who thus did not scruple to take arms against their brothers in blood.

War had not been formally declared, but the American generals resolved to anticipate the actual outbreak of hostilities by decisively checking the rising at its outset. The Scouts surrounded the tents of the Sioux, and after a desperate resistance, captured Sitting Bull, who was mortally wounded along with his son and his best soldiers. The same Scouts guided Forsyth in the pursuit of the Sioux fugitives, who were caught in a trap at a spot named Cherry Creek. The Indians, at the sight of the Scouts, whom they hated worse than the whites themselves, resolved to continue their resistance. But Forsyth ordered his machine-guns to open fire on the disorganised ranks of the enemy, among whom there were more women and children than men. The guns poured in a deadly fire, and when the bugles sounded 'cease firing,' not a single man or woman was left alive. The only survivors of that frightful engagement, in which the Sioux died like heroes, were six little children. Even the Americans, who were never scrupulous about the rights, property, or lives of the Indians, blushed for that shameful victory, and the President of the United States disavowed Forsyth's action. General Miles was easily able to surround the few scattered fragments of the tribe, who, exhausted and starving, without chief and without hope, yet continued the campaign, and without further bloodshed forced them to capitulate in January 1891. The blow dealt the Sioux in this, probably

the last of the Indian wars, has been a mortal one, and they will never recover from their last defeat.

60. Washington

Washington is the seat of the national government, and the chief place of the District of Columbia, on the left bank of the River Potomac. The ground-plan of the capital of the United States was laid out, in the year 1791, in the most free-handed manner. But, despite its happy situation, the city became very slowly populated, and to-day it reckons only 230,000 inhabitants, who are spread over an immense area. Washington has been well called the 'City of magnificent distances,' for in many of its streets the houses are separated by such large tracts of land as almost to look like lonely country houses.

On a rising ground, in the middle of the city, stands the Capitol—a magnificent structure, all built of iron and brick, and painted a uniform white colour, which gives it at a certain distance the look of marble. Three hundred and eighty steps lead up to the cupola, which rises 307 feet above the ground. On the right and left of the Capitol lie the two houses of the American Parliament—the Senate and the House of Representatives. Both of them are built alike, all in white marble, decorated with beautiful sculptures and adorned with remarkably fine bronze gates. The Capitol thus presents a truly imposing aspect: its white mass standing solitary in the middle of a square ornamented with green lawns and beautiful statues, dominates the whole city, and forms a centre on which the twelve principal avenues converge. At the opposite end of Pennsylvania Avenue (the chief street

of all) stands the Treasury, a superb building of granite and white marble, and near it a perfectly simple and unpretentious house, called the White House, which is the official residence of the President of the Republic. There, as at the Capitol,—and indeed everywhere—no permission is needed to enter. The entry is free to all comers, whether Americans or not; there is not a single soldier at the gate, nor any doorkeeper except a negro, rather badly dressed, who shows visitors into the public reception-rooms or private apartments, which have nothing to distinguish them except their extreme simplicity.

Lafayette Square—so called after the famous French general who helped the Americans in their War of Independence—deserves a notice. Its beautiful trees, its masses of flowers, and its green lawns have made it a most popular promenade, the interest of which is increased by a domesticated colony of prairie-dogs, whose merry gambols attract every one's attention. Facing the White House, on the banks of the Potomac, which is nearly two miles broad at that place, stands a majestic obelisk, dedicated to the memory of General Washington. Shooting up for 555 feet, it is the highest piece of masonry in the world, and surpasses in height even the Great Pyramid, Cologne Cathedral, or St. Peter's in Rome.

(i) 'More than half the city is in streets and parks, the former of which are the widest in the world, and are overhung by myriads of fine shade-trees. Indeed, no other city is so magnificently shaded, for there are upwards of 120,000 trees on the 120 miles of its streets.'

(ii) 'In 1861 Washington was practically only a second-rate Maryland town, with streets of abysmal mud, littered here and there by half-finished public buildings. . . . Washington is now one of the most desirable residence-cities in the world, with a blameless civic administration, a bland climate, beautiful scenery and architecture, and noble historic associations.'—KING'S *Handbook to the United States.*

61. The Elevated Railway in New York

There were two difficulties which forbade the people of New York furnishing their city with an underground system of railways, as is to be found in London. One was the nearness of water and the sandy nature of the subsoil, which made the sinking of underground passages both dangerous and enormously expensive; the second reason was the loftiness of the houses—a loftiness made necessary by the limited area on which New York is built—the safety of which would be endangered by underground tunnelling. The Americans therefore solved the problem of street railways in a very simple manner. Instead of putting them underground, they put them in the air, and supported them on light iron frameworks. The railway thus passes along the line of the streets, or rather along the avenues, which run along the whole length of the city, and which are intersected by the streets at right angles. Nearly all American cities are laid out on this rectangular plan. When the avenue is narrow, the two railroads are set side by side, and each strengthens the other; but, on the other hand, when it is broad enough, a separate line runs close along each pavement about the level of the first story of the houses.

Nothing is more extraordinary than the aspect of Third Avenue in New York. The roadway stretches along, perfectly straight, till far out of sight, and is bordered with houses decorated with rectangular squares of white to imitate bricks. The sky overhead is criss-crossed in every direction with an intricate network of electric wires, supported on huge white posts. Then, on each side of the way, far above the heads of the horses, upheld on supports so fragile that

from a distance they seem to disappear, there hovers the overhead railway, a structure of fairy-like lightness, yet of enduring strength. Below, the crowd passes busily along, the street-huckster bawls his wares, fifty vehicles roll along at a time, and the general traffic-life of a great city is not stayed for an instant. Suddenly, almost out of nowhere, with a rush and a dull rumbling sound, the tiny locomotive steams up; a light wisp of smoke floats across the street, and the train is gone again, leaving behind it a rattling of iron rails which never ceases. To cross from one line to the other in case of accident, a kind of bridge binding the two lines together allows the trains to pass each other. So as to guard against derailment, a course of strong woodwork, solidly clamped to the uprights, runs the whole length of the line. It is intended to hinder a carriage getting off the rails and tumbling into the street below; but so far it has happily been useless, for no accident of that kind has ever taken place.

The stations, placed about three hundred yards apart, are situated on a platform at the crossing of a street and an avenue. The passengers climb up by two sets of steps, one for those entering, and the other for those leaving, the train. The rolling-stock is built with the utmost care. To minimise as far as possible the weight of the locomotives and carriages, they run on paper wheels, manufactured by a new process. The papier-mâché is compressed by hydraulic power, till it becomes as hard as wood, and, by reason of the evenness of its fibre, offers a far greater power of resistance and elasticity. The paper, bound round with tires of steel, combines in an admirable fashion two indispensable qualities—solidity and lightness. Underneath the locomotive, a large sheet-iron box holds the cinders, waste-water, and anything else that could fall on the passengers in the street below.

62. Brooklyn Suspension Bridge

If the elevated railways are a proof of the enterprising spirit of the American people, the suspension bridge which joins New York—the mother city—to Brooklyn—its grown-up daughter, almost its sister—shows to what lengths the daring of man can run. Special topographical conditions were necessary to render possible the problem of throwing a bridge across an arm of the sea about 500 yards broad, while leaving at the same time sufficient room for the largest ships to pass underneath it.

The peninsula of Manhattan — the so-called Manhattan Island — on which New York is built, is shaped like a donkey's back. From the central ridge a gentle slope drops towards the sea on either side. Brooklyn is also situated on the slope of a low hill which borders East River. This peculiar configuration of the land brings one to the level of the bridge without too much of a slope.

It became indispensable to establish quick and easy communication between New York and Brooklyn, which was, when the bridge was made, a city of 300,000 inhabitants, and which now forms part of New York. Before the bridge, sixty lines of steam ferry-boats were hardly enough to cope with the traffic, though they were ceaselessly on the move, arriving at one bank only to go back again within the next five minutes. If there came a foggy day, or a storm, or if the river was blocked with drift-ice, the ferry-boat traffic was quite disorganised, and the crossing was either difficult or totally impossible.

The bridge, which is hung on four gigantic steel cables, was opened for traffic in the year 1883. The construction

cost £3,200,000—£1,200,000 more than the famous bridge over the Mississippi at St. Louis, which was once held to be the masterpiece of American engineering. The bridge has three tiers. Up above runs a double line of railway; below there is a roadway for tram-cars and vehicles of all descriptions; and the lowest tier is reserved for foot-passengers only. The lowest platform of the bridge is raised 130 feet above the level of the sea beneath. On either side of East River stand the two immense piers, to which the supporting cables are attached—their huge arches of unhewn stone like two grand windows in some Gothic cathedral. To their flanks clings, like an endless screw, the tiny ladder, by which the top of the edifice may be reached.

'Even when seen from afar off, the bridge catches hold of you with an overmastering power of fascination. Perched high aloft on one of the piers, you can gaze down at the vessels sailing along hundreds of feet below, and showing but as tiny specks on the blue water. But to walk on the bridge itself, to tread upon that monstrous trellis of iron and steel (swung for 1600 feet over the abyss beneath), to watch the trains following each other over the two tracks, and the packet-boats shoot along far beneath your feet, while the carts and carriages pass and repass, and the crowd shoulder each other in bustling haste—all this compels one to recognise in the engineer one of the greatest workmen of our age, and to do justice to the "go-ahead" spirit of the American people, which rises superior to every difficulty.'

'The view from the top of the towers is splendid. On one side stretches New York with its ocean of roofs, whence, jutting reef-like from out the waves, springs some monument or building, towering above the rest. First there are the offices of the New York Tribune newspaper, with their seven stories and pointed clock-tower; further off the imposing mass of the Post-office, with its two domes whence the Stars and Stripes float out in

the breeze; on another side the stately red spire of Trinity Church, and a dozen others. The Hudson sweeps past the city like a broad band of silver glancing in the sun; then come the masts of the vessels anchored off Jersey City, and Jersey City itself, girdled round with an amphitheatre of low hills which vanish in a hazy blue of distance. Below stretch the quays of New York on East River, and the jetties lined with ships, whose highest masts appear no higher than the stalks of wheat in a cornfield. The water glistens 300 feet below the tower; on the other side, across the inlet, the sister-tower rears its head; and the huge black cables, thick as the hugest tree-trunk, fine down, as one's eye travels across, to what seems but a tiny thread, hardly strong enough to hold a beetle.'

N.B.—East River is really an arm of the sea on the eastern side of New York—between it and Long Island.

63. How Immigrants Land

Immigration forms part of the great wealth of the United States. We may reckon that each immigrant, considered as a worker—as a 'hand'—is worth to the country fully as much as the price that used to be paid for a negro slave—that is to say, about £200. Further, it is to be noted that to immigration, more than to anything else, the United States owe the remarkable growth of their population. The number of inhabitants nearly doubles itself in about twenty or thirty years, and for that the country has to thank the swarm of immigrants—from the British Isles, from Germany, Scandinavia, Italy, and Hungary—that pours into it year after year. To-day the people of the States number about seventy millions; but they would scarcely have reached twenty millions, were it not for the immigrants that have been flocking into the country these fifty years past.

(i) All, or most of, these new comers were scattered over the unoccupied farm-lands of the States; they very speedily lost their nationality as Germans, or Swedes, or Irishmen, and became American citizens. But now there is

little land for immigrants to occupy, and they are forced into the great cities. There they form foreign colonies with others of their own nationality, and, ground down by a cruel competition, and being, for the most part, without any education, they are beginning to be a serious danger to the American commonwealth. It is from amongst these foreign colonies that many of the fierce labour wars of the United States spring up.

(ii) 'The question whether this stream of immigration, which is pouring into the country at the rate of about 830 for every day of the week all the year round, shall be encouraged or dammed, is a many-sided one. But when one sees the mass of low cosmopolitan humanity such as is to be found at Ellis Island, one cannot help feeling that, to assimilate it, the country has need of an excellent digestion.'—WHITMARSH, *Century Magazine.*

The landing-depôt for immigrants is a place known as Ellis Island, a small island in the Hudson River opposite New York City. There every provision is made for speedy and safe disembarkation, and the new comers are protected from dangers and snares of all kinds, to which they were at one time exposed on their first landing. Every precaution is taken not to delay their journey to their ultimate destination; and the only charge made on them is one of a few shillings to defray the cost of the health-officer's visit of inspection, of medicine and hospital if they are sick, and of all expenses incurred in forwarding them on their route. The Commissioners of immigration have agencies in all the different States, especially in the State of New York, so that they may both follow and advise the future American citizen, and, if need be, protect him.

Whenever an emigrant steamer is sighted at the Quarantine Station, which lies on Staten Island, just at the entrance of New York Harbour, and six miles away from Ellis Island, the Health-Officer hails her, and comes aboard. He conducts a thorough investigation of the passengers—finds out if there are any unwell, and, if so, what is the matter with them, sees that the emigrants' quarters are properly clean, listens

to any complaints, and then sends in a general report to the Chief Inspector at Ellis Island.

'An hour after sundown,' says a writer who has described the passage of an emigrant ship across the Atlantic, 'our steamer was made fast alongside her pier in the North River. The saloon and second-cabin passengers proceeded to stream down the gangway at once; but we, being immigrants, were roped well back and carefully guarded. For the steamship company is responsible to the government for every immigrant it brings. If any escape before being turned over to the proper authorities at Ellis Island, the company is liable to a heavy fine. Not being well up in the immigration laws, however, the whole four hundred of us crowded to the dock side of the vessel, and waited impatiently to be loosed.' But no immigrant is allowed to land, until he has been formally passed and examined by the officials at Ellis Island. The writer, who was himself a steerage passenger, continues: 'We put in one more hot, uncomfortable night aboard, praying for morning. When that came, for two hours we were baked on the pier while our baggage was being overhauled by the Custom-House Officers. Then, each in his group, we were packed aboard a barge, and towed down to Ellis Island.'

Once more the doctor examines every immigrant; and any sick people that are discovered, both at this and the previous inspection on board the ship, are sent off to a special hospital. Then comes the examination in chief. Each individual is required to give a full account of him- or herself, has to show what money he has, to state what he intends to do and where he is going, and whether he has ever been in a prison or been supported by public charity. In this last respect the laws are very severe. The Americans will not receive into

their country any criminal, lunatic, or pauper—any person, in fact, who cannot support himself. All such persons are put into what is called the 'deported pen' in Ellis Island, and sent back to the country they came from at the expense of the steamship company that brought them. An Arab camel-driver once vainly attempted to pass the examination at Ellis Island; but the American officials decided that camel-driving was not a profession in which he was likely to find employment in the United States, and so sent him back to Arabia.

When all the formalities of examination are over, the new comers are taken over the Hudson River to the immigration office in Battery Park, New York. There they are met by their friends, if they have any, and are dispersed all over the country. Speaking broadly, one-third of the immigrants stay in New York itself, and many of these, being of no particular use to their own country, only help to swell the population of the horrible slums for which that city has so bad a name. A fourth of them—and these are generally honest, sturdy farm-labourers from Scandinavia—make towards the three great grain States of the West—Illinois, Ohio, and Wisconsin. An eighth of the future citizens of the United States, the most cosmopolitan country in the civilised world, settle in the industrial and mining region of Pennsylvania. Too many of these are wild, uneducated, and lawless mining people from Austria-Hungary, and hence arise the dreadful labour wars of that region, which frequently end in the calling out of the military, and the too free shedding of blood. Of the rest a few go to the North Eastern States and the States of the Missouri valley, and a few more, but a very few, to the South, where the presence of the negro and the almost tropical nature of the climate make white labour nearly impossible.

The best class of emigrants that enter the United States are probably the Germans. They leave their country in large bodies, and there are certain districts in Germany nearly depopulated by emigration; entire villages, clergymen and burgomasters (heads of the village council) at their head, embark for America. Regulations and vexatious by-laws, every kind of prohibition that the German government imposes on the shipping companies, are powerless to stem this exodus. The current—one might almost say the torrent of emigration—overcomes every obstacle; and the Prussian peasant, starved among the sands and marshes of his native soil, sets out to seek beyond the Ocean a new fatherland, and food for himself and for his children.

64. The Beginnings of San Francisco

Up to the year 1846 San Francisco was only known as the seat of a small mission, and was a hamlet of some 200 souls; and even this amount was largely due to the establishment of a station belonging to the Hudson Bay Company. Hardly had the Americans planted their 'star-spangled banner' in Californian soil, when a sudden change came over everything. Attracted by the admirable natural advantages of the position, they flocked in in such numbers that in less than a year the number of the houses was doubled, and the population six times as large. But the event, which was to set the full tide of prosperity flowing over the country, was very near at hand. About the beginning of the year 1848 a rumour spread about that gold had been discovered in considerable quantities in the interior, at the foot of the Sierra Nevada. The actual discoverer was one James Marshall, a lumberman in the service of a man called Sutter, after whom Sutter's Fort, the site of the present city of Sacramento, was named.

San Francisco was electrified. During the first months which followed the great news, fifty thousand pounds' worth of gold was despatched from the mines, despite the

small number of the miners, and, during the next two months, more than double as much. The town soon became almost deserted. Houses remained half built, commerce was forgotten, and every man made hot-foot for the 'promised land.' 'Gold! gold! that is the only cry which rings through the country from the coast to the foot of the mountains,' was the sorrowful complaint of the *San Francisco Journal*; 'everybody is leaving us—readers and printers—and we are therefore compelled to suspend publication.' It was the day of fabulous salaries. Ordinary manual labour commanded a dollar an hour, and was hard to get even then; a skilled artisan asked up to twenty dollars a day; and the carpenters went on strike sooner than see their daily wage go as low as seventeen dollars. Every one made money, and every one expected to be rich the day after to-morrow.

It is easy to see that to provide for the needs of the people, that streamed from day to day into the city from all parts of the world, was rather a difficult task. To build them houses was simply impossible; as the smallest house, counting the cost of construction and materials, came to about a dollar a brick. Wood was plentiful and cheap enough, however; and the new comers were housed in wooden barracks or sheds—the best hotels that were then to be had—or else camped out in the open air. The tents covered every available spot, and, when the rainy season arrived, which this year (1849) came earlier, lasted longer, and was more severe than usual, these miserable dwellings became almost uninhabitable through the dirty, fever-breeding pools of water that surrounded them. The streets—such as they were—were just rubbish-heaps covered with filth of every kind, or seas of mud in which a man sank up to his middle. The people died like rats: the privations of the journey to

California had already enfeebled them, and the squalor of their surroundings did the rest.

These were the beginnings of San Francisco. Any of the first inhabitants, who at the end of three or four years let his memory hark back, would most certainly have refused to recognise, in the stately town that spread before his eyes, the shapeless mass of hovels that his memory carried him back to.

The first five or six years of San Francisco's existence was a period of perpetual war—every man striving against his fellow. Indeed 'Frisco,' as its people call it, was a typical young American town. In the mines, incessant and furious work; in the city, ceaseless debauchery; brutal murders attracted little notice; of law and order there was none, and the revolver and the bowie-knife reigned supreme. The city was scourged with fire—too often the work of wilful fire-raisers, who found in the confusion golden opportunities for robbery. Five times, within less than two years, the city was well-nigh annihilated—only to rise again from its ashes, more beautiful and more vast than before.

At last the inhabitants could stand the presence of murder and rapine in their midst no longer. The legal authorities had no power to stop it; so the people resolved to take the power into their own hands. They held a meeting, and laid the foundations of an association for the protection of property and the maintenance of order. This was the terrible 'Vigilance Committee,' which hunted down malefactors of every sort without mercy. They only used two punishments —death or banishment from the city. A culprit, when apprehended, was taken before the committee-members, received a hurried, though a tolerably just, trial, and if condemned was swung off the nearest tree, or else warned to leave San Francisco instantly, and not come back on pain of

death. The first execution was that of an ex-convict, who shot a man down in the open street. The members of the committee took the murderer out of prison and hanged him forthwith. The Vigilance Committee only sat for four months, during which they thoroughly purged their city of crime and disorder; at the end of that time they had the good sense to disband, after making a 'solemn final parade of 5137 armed and disciplined troops, with three batteries and 290 dragoons.'

But another revolution was gradually working in the minds of the citizens. At first, everybody had made a rush for the mines; and in the imagination of the first immigrants California was nothing but a quarry of pure gold. As time went on men began to see that the 'placer' mining—the alluvial gold—would soon be exhausted, and that there were other and more profitable occupations than digging and washing gold-dust. All that was wanted was capital and honesty; and, when these began to come to San Francisco, the future prosperity of the city was assured.

The true riches of California lie not in her gold, but in the fertility of her soil. A sixth part of the cultivable area is devoted to agriculture. The principal products are, and always will be, cereals and fruit. Of wheat alone there is an ample enough supply to provide for the needs of the country, and to export in considerable quantities to Mexico, China, and Japan.

'Closing the passage by the Golden Gate, a city of white houses, spires, and pinnacles rises from the water-line, and rolling backward over flat and sand-drift, strikes a headland on the right, and surging up two hills, creams round their sides, and runs in foam towards yet more distant heights. This city is San Francisco, seen from the ferry-boat; a port and town with ships and steamers, wharves and docks, in which the flags of every nation under heaven, from England to China, flutter on the breeze; a town of banks,

hotels, and magazines, of stock exchanges, mining companies, and agricultural shows; a town of learned professors, eminent physicians, able editors, and distinguished advocates; a town of gamblers, rowdies, and thieves; a refuge for all tongues and peoples, from the Saxon to the Dyak, from the Tartar to the Celt.'—HEPWORTH DIXON'S *White Conquest.*

TIDES

1. **Tides.**—Tides are the regular rising and falling of the waters of the ocean, and they are caused chiefly by the attraction—the drawing power—of the **Moon,** and partly also by that of the **Sun.** The Moon exercises the greater attraction, because it is nearer to the Earth than the Sun is.

On the shore of the sea you will notice that sometimes the water comes close up to the dry land, as distinct from the seashore: that is **high water.** On the other hand, the water at other times recedes from the edge of the dry land, and leaves uncovered a stretch of sand, gravel, or seaweed-clad rocks: that is **low water.** When the tide is rising it is said to **flow**; when it is going away from the land it is said to **ebb.** There are **two periods** of **high water** and **two** of **low water** in every twenty-four hours and fifty minutes.

2. **How tides are caused.**—The Moon attracts all things on or round the Earth, including the water, and pulls them towards itself. It attracts, then, both the water and the Earth. But the water, being fluid—composed of innumerable movable particles—changes in shape as it is pulled, and rises up towards the Moon in a huge heap, on the side *nearest* the Moon. But on the side remote from the Moon, the Earth itself is pulled *away* from the water, and there is a heaping-up of waters on that side too. Now, if the earth were stationary, this heaping-up of the waters would be stationary also. But as the earth is continually spinning round, the heaped-up water is carried along with it, and, instead of

resting in a heap in the same place, it is spread out into a broad flat wave. This is called the **tidal wave.** This tidal wave goes travelling over the ocean round the earth, following the Moon; and, as it touches at different places along the sea-coast, it makes **high-water** there. Similarly the heaped-up waters, on the other side of the earth, are travelling round it: thus there are always **two tidal waves** travelling round at the same time, each half-a-day apart. Therefore, as has been said before, there are two periods of high-water, and, midway between them, two periods of low-water.

3. **The tidal wave.**—Speaking broadly, the tidal wave—the heap of water which the moon raises—is about three or four feet high. This is about the height of the tidal wave in an open ocean like the Pacific, and it is in that ocean that the chief tidal wave is generated. Were our globe covered with nothing but water, the tidal wave would travel regularly round it, following the course of the Moon. But the regularity of its course is checked by land-masses, which turn it in different directions; so that a tide, at a given time and place, may be caused by a wave that has been heaped up in some part of the ocean thousands of miles away. In the Southern Pacific, where the tidal wave is generated, its speed is about 1000 miles an hour; but that speed has been so broken by intervening land-masses by the time it reaches the German Ocean, that there it is under fifty miles an hour. A tidal wave that is generated off the west coast of South America will make its appearance off our shores two days later.

(i) The tidal wave flows most steadily and rapidly in deep, unobstructed stretches of water, but it rises to its greatest height in bays with high, steep walls on either side. Thus in the **Bay of Fundy,** in Nova Scotia, the tide is forced up to a height of 70, 80, or even 100 feet. In the **Bristol Channel,** which is shaped like a funnel with the big end outwards, the tides are raised

up to a height of from 30 to 50 feet. So with the **Persian Gulf**, where there is a tide-rise of about 36 feet. But, reversely, in the **Mediterranean**, where the opening at the Straits of Gibraltar is too narrow to admit the tidal wave, there is hardly any tide at all. So also in the **Baltic**.

(ii) A **Bore** is the name given to a wall of water which the tide forces up a river estuary. Bores occur in the Severn, Ganges, Amazon, Yang-tse-Kiang, and other rivers. The tide-wave rushes up these rivers with resistless force, often capsizing boats and doing considerable damage to the banks.

(iii) **Cotidal lines** are imaginary lines over the ocean along which high-water occurs at the same time.

4. **Different sorts of tides.**—We have said before that both the Sun and the Moon exercise attraction on the Earth and all things on it. We shall now see what effect the Sun has on the tides. When the Sun and the Moon are on the same side of the Earth—that is, at New Moon—they are said to

be in **conjunction**; and when on opposite sides of the Earth—that is, at Full Moon—they are said to be in **opposition**:

In both these positions they are exercising their attracting force *in the same line*: they are both pulling the water towards them together. Therefore the tide rises very high, and is called a **spring-tide**.

At these times the water rises higher than the average at **high-water**, and falls lower than the average at **low-water** or ebb-tide. On the other hand, while the Sun and the Moon are at right angles to one

another, or in **quadrature**, both these bodies pull *in opposite directions.* Therefore the tide is a low or **neap** (that is, nipped) tide. At these times the water does not reach the average mark at high-water, nor does it fall as low as usual at low-water.

(i) **Double Tides.**—Some seas are affected by a double set of tidal waves. This is the case in the **German Ocean,** where one tidal wave flows into it through the Straits of Dover, and another from round the north of Scotland. But in the German Ocean the two tidal waves either counteract each other, or else join to form tides of immense height. But at **Colombo** in Ceylon, which is washed by two tidal waves, they produce the extraordinary phenomenon of **four tides** a day, instead of two.

(ii) **Establishment of a Port.**—Theoretically, the tide should occur at a given place at the very time when it is directly opposite the Moon. But it does not. Owing to the comparatively slow-moving character of the water and other causes, the tide does not in most places occur till some hours after the Moon's passage. This interval varies with different places, but it is practically uniform at any given place. It is known for most places, and is called the **Establishment of the Port.**

CURRENTS

1. **Currents.**—A current is a river in the ocean, the bed and banks of which are composed of other sea-water. The waves of the sea, as everybody knows, are never still. But they do not always go forward, as they seem to; unless a **current** is running in that part of the sea where the waters are agitated, the waves merely move up and down. These currents exactly resemble a river: they have a definite breadth, and, like a river, they will bear along anything floating on them in a definite direction. Thus, for instance, it is not an uncommon sight to see an iceberg sailing over the sea, even in the face of a strong wind.

Currents differ from the seas, through which they flow, in temperature, in saltness, and often in colour. Thus a traveller from England across the Atlantic knows at once when he has got into the Gulf Stream by the peculiar

blue colour of the water, which is more brilliant than that of the surrounding ocean. Similarly, too, it is only natural to expect that a current, which flows from the icy Arctic Ocean, should be colder than water further south into which it falls. Lastly, the Currents which come from the Poles contain less salt water than the ocean into which they flow, because there are no great rivers at the Poles discharging salts into the sea.

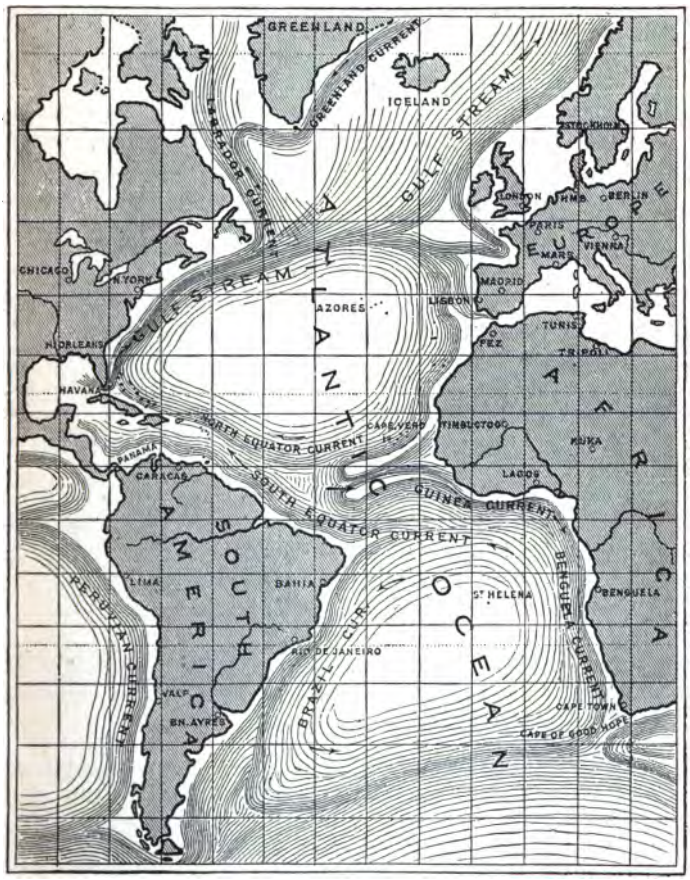
2. **How Currents are caused.**—There are two chief causes which make the waters of the globe circulate as currents. They are—the **difference of temperature** in different parts of the ocean, and the **prevailing winds.** Sometimes these two causes act together with each other; sometimes they counteract one another. But they are the chief causes of the constant circulation of water, which forms an important regulator of the temperature of different lands on the globe.

(i) **Difference of Temperature.**—Water when warmed is light and tends to rise; water when chilled is dense and tends to sink. Now at the Equator the Sun heats the water; while the icy cold at the Poles chills the water. Therefore at the Equator the water rises, and at the Poles the water sinks. But there is no such thing as emptiness in nature—the proper level of water must always be restored; and therefore, as the warm water rises at the Equator, the cold water from the Poles rushes in to take its place. So too as the dense water sinks at the Poles, the warmer water from the Equator comes to take its place. This is what is known as the **vertical circulation** of water. The word 'vertical' means 'upright' or 'up and down'; and a vertical circulation is a rising of the waters up and a corresponding fall down. Vertical circulation goes on in every kettle where the hotter water next the fire is continually rising up. We have then 'a great body of ice-cold water of enormous depth creeping along the bottom of the ocean, both from the north and the south towards the equatorial regions,' and reversely a body of warmer water spreading itself from the Equator towards the Poles.

(ii) **Wind Currents.**—If a wind constantly blows in the same direction, it will carry the waters along with it. This is what is known as **horizontal circulation,** the movement of the waters along, as opposed to their movement up and down—vertically.

The best-known wind-current is the **Equatorial Current,** caused by the **Trade Winds,** which flows west. Wind-currents are generally shallow, and are known as **drift-currents.** But the currents caused by vertical circulation are deep, and are called **stream** or **deep-sea** currents.

(iii) **Indraught Currents.**—Whether the current be one connected with vertical or horizontal circulation, there must always be another current bringing in the water that the other takes away. Such supplying currents are known as indraught currents.



THE CURRENTS OF THE ATLANTIC.

3. **Currents of the Atlantic.**—The chief of these are the **Equatorial Current**, the **Gulf Stream,** and the **Arctic Current.**

(i) The **Equatorial Current**, driven on by the Trade Winds, flows from the west coast of Africa to a point near Cape St. Roque in South America. There it splits; and one branch goes south as the **Brazil Current**, and the other, a larger branch, turns into the Caribbean Sea and enters the Gulf of Mexico. It sweeps past the Orinoco and Amazon with such force, that even these mighty rivers are unable to turn it aside.

(ii) **The Gulf Stream.**—As the Equatorial Current enters that great tank of hot water, the Gulf of Mexico, it becomes very hot, and is swollen by the outflow of the Mississippi, till at length it turns and forces its way out into the Atlantic as the **Gulf Stream.** Then it is about 30 or 40 miles wide, 700 feet deep, and has a speed of about 80 miles a day. For some distance the Gulf Stream flows north along the coast of North America as far as Newfoundland. There it sweeps east to the Azores, where it splits. One branch goes southward as the **North African Current** to join the parent Equatorial Current again. The other runs on north-east between the British Isles and Iceland, warming our shores and those of the north of Norway, and perhaps bearing the seeds and drift-weed of the New World as far as the North Pole. The circular sea enclosed between the Equatorial Current, the Gulf Stream, and the North African current, is called the **Sargasso Sea.** This sea is covered with a special kind of seaweed known as the 'Gulf-weed,' which is often present in such quantities as to check the progress of ships.

(iii) The **Arctic Current** comes down in two branches from the North Pole—one through Davis Straits, and the other along the east coast of Greenland. Then they join. It is this cold current which gives Labrador its bleak and miserable climate, just as the warm Gulf Stream gives the British Isles, which are opposite Labrador, a genially temperate one.

4. **Currents of the Pacific.**—The chief are: the **Equatorial Current**, the **Japan Current** or **Black Stream**, the **Peruvian Current**, and the **Antarctic Current.**

(i) The **Equatorial Current** flows westward to the East Indies and China. Then it is deflected by the coast of Asia, and forced to turn north-east, as the **Japan Current.** This is a warm current, the 'Gulf Stream of the Pacific,' which tempers the climates of Japan and the north-west of North America.

(ii) The **Antarctic Current** has a general trend to the north-east. It is the chief source of supply for the **indraught currents.** Its influence is felt in all the Oceans—the Pacific, the Atlantic, and the Indian, and in all of them

it runs either north-east or east. One of its branches, the **Peruvian Current,** which is a cold current, passes north along the western shore of South America, and then runs west to join the Equatorial Current.

5. **Currents of the Indian Ocean.**—The Equatorial Current, as before, runs west towards Africa. It passes between Madagascar and the African coast as the **Mozambique Current,** and joins the **Agulhas Current,** a branch of the Antarctic Current, near the cape of the same name.

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